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ABSTRACT

Based on a survey of Association of Research Libraries (ARL) member libraries in February 1986, this kit is designed to illustrate a wide range of alternative approaches to analyzing the costs of technical services. The kit consists of the following unedited primary-source documents: (1) SPEC Technical Services Costs Survey (Three-Year Update) February 3, 1986, form and results of survey; (2) SPEC Flyer Number 89, "Technical Services Cost Studies in ARL Libraries"; (3) Statistical Questionnaire on Cataloging Activities in Quebec University Libraries and the Bibliotheque Nationale du Quebec (Laval University); (4) Management Information System/MIS reports (University of Waterloo); (5) Plan and Task List for a Technical Services Review (Rutgers University); (6) Law Library Review 1982, Technical Services Study (University of Saskatchewan); (7) General Technical Services Processing Costs (Vanderbilt University); (8) Time per Item Statistics Comparing a Current Operation with an Integrated Library System (National Agriculture Library); (9) Costs Associated with the Card Catalog (University of Oregon); and (10) Retrospective Conversion (Iowa State University). A brief overview of survey findings and a bibliography are also included. (KM)

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TECHNICAL SERVICES COST STUDIES IN ARL LIBRARIES

While academic and research libraries remain interested in analyzing the costs of technical services, the lack of standardized methods for collecting comparable data appears to be limiting the number of libraries that have conducted cost studies. In late 1982, *SPEC Kit #89, Technical Services Cost Studies*, (November-December 1982, O.P.) reported that although many ARL libraries saw the need for comparative cost data for technical services, few had done such cost studies. A similar survey in February of this year, to which 79 of the 118 ARL libraries responded, produced similar results.

In the 1982 survey, 74% of the respondents indicated that comparative cost data would be useful. This year, that percentage increased slightly to 79%. In 1982, 33% of respondents indicated that they had conducted a cost study in the preceding three years. In 1986, that percentage decreased somewhat: 24% reported they had done a cost study in the preceding three years, and 4% were in the planning stages of conducting such a study.The accompanying kit contains more detailed survey responses.

PROCEDURES, RATIONALE, AND USEFULNESS. Of the 21 libraries which had done or were planning cost studies, 17 used library staff, 1 used an outside agency or consultant, and 3 used a combination of library staff and an outside agency or consultant. Of the libraries using staff, the majority relied on technical services staff; little in the way of specific training or course work preparatory to performing the studies was noted.

Libraries often undertake studies of technical services to identify costs related to specific functions, as part of planning for changes in automation, building space, or reorganization. The most-cited reason for obtaining cost data for technical services operations was to gain baseline information for anticipated changes. Baseline information for funding requests and preparation for automation implementation were the next most cited causes. Assistance in effecting a specific organizational change and meeting the information needs of the parent institution or accrediting organization were noted less frequently as reasons for studies.

Of the libraries which have done or are doing cost studies, 34% report that the results are "essential" to their activities, 19% report that results are "very useful," and 43% report that the study has been of "some" use. None of the responding libraries indicated that there had been no useful information gained.

ISSUES AND NEEDS. Despite the reported interest in cost studies, they remain difficult to accomplish in a a non-profit, public services oriented environment. In the data collection phase,

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there are often problems in determining and assigning costs related to automation and overhead. Libraries that collect cost data must then determine how best to analyze and act on results, and in some cases, when information has been analyzed and interpreted, it has been difficult to initiate change based on the results.

Staff training in problem definition, data gathering, and analysis techniques, either through university offerings or library-specific programs such as the OMS Analytical Skills Institute, would probably benefit libraries that indicate interest in cost studies but that have not attempted to conduct one. By developing staff skills related to the use of analytical and quantitative methods, libraries can begin to explore the process of collecting and interpreting data to develop performance measures which can serve as management tools and have potential as tools for comparing data.

A majority of comments on the utility of comparative cost data focused on the difficulties of obtaining truly comparative data. One library with a negative response to the comparable data question gave a succinct "apples and pears." Another library indicated that such data would be useful, but added that "unfortunately it has no peers." Among the libraries commenting that comparable data would be useful, the majority questioned whether the lack of standards for true comparability made such data impossible to obtain.

Difficulties inherent in comparing cost data fall into two categories:

- those related to differences in labor costs
- those related to lack of standardization of definitions for tasks and procedures

Some respondents indicated that an analysis of the resources necessary to perform a given task in terms of hours and levels of staff required would be much more useful than "bottom line" dollar figures. Several libraries referred to the work of Paul B. Kantor on performance measures (*Objective Performance Measures for Academic and Research Libraries*, Washington, D.C.: ARL, 1984). Truly comparative data from peer institutions and standards for obtaining such data seem little more available in 1986 than in 1982.

The SPEC Kit on Technical Services Cost Studies in ARL Libraries (#125, June 1986, 100 pages) includes SPEC survey results, a statistical questionnaire with definitions used by several Canadian libraries to obtain comparative data, an outline of a management information system for total library analysis with a specific section on technical services activities, a breakdown of all technical services activities into a menu of processing modules used for cost recovery, and two studies analyzing costs of specific products: the card catalog and retrospective conversion.

* * * *

This kit was prepared by Heidi Lee Hoerman, Associate Director of Technical Services, Montana State University Libraries (formerly Head of Technical Systems and Bibliographic Control, Milbank Memorial Library, Teachers College, Columbia University) as part of the OMS Collaborative Research-Writing Program.

SPEC Kits (ISSN 0160 3582) are available by subscription through subscriptions services or direct from publisher. Individual issues cost $20.00, plus $5.00 postage outside the U.S., through distributors or direct. (ARL members price $10.00.) Prepayment is required. If ordering direct, send check payable to "ARL Office of Management Studies" to: SPEC, Office of Management Studies, 1527 New Hampshire Ave., N.W., Washington, D.C. 20036. Order by Kit Number and Title. Direct Order Forms listing back issues and Subscription Forms are available from the same address.

USES OF SPEC KITS

The Systems and Procedures Exchange Center (SPEC) is a clearinghouse operated by the Association of Research Libraries, Office of Management Studies that provides a central source of timely information and materials on the management and operations of large academic and research libraries. It facilitates the exchange of knowledge and documents through SPEC Kits, which are distributed ten times each year to ARL members and other interested libraries. The Kits include topically-arranged groupings of unedited primary source documents – selected for their value to administrators and decision-makers – that illustrate a wide range of alternative approaches to specfic issues.

Kit documents come from general membership surveys and from selected libraries contacted directly by SPEC, and most Kits are produced within six months of surveys. The documents' value comes from their variety of ideas, methods, and solutions. They are not viewed as finished products, but rather as points of departure for a library's planning efforts and as stimulants to innovative approaches to problem-solving. As such, Kits do not present answers or prescriptions for any one library; instead they illustrate how selected ARL members are planning for or dealing with particular issues. The worth of any one Kit to a particular library will depend upon the specific topic covered and the library's stage of development in that area.

Materials are selected according to the following criteria:

- Presents an approach of potential value to administrators and decision-makers
- Timely, and dealing directly with the topic under consideration
- Probability of application of ideas or thinking to other library situations
- Illustrative of actual practice, rather than theoretical
- Understandable, readable communication

All together, the materials should provide a range of alternative approaches that complement each other, provide variety, and stimulate comparison and contrast.

Libraries can take advantage of the Kit compilations in a number of ways. Administrators can evaluate the assumptions, methods, and results of other libraries' approaches; compare and contrast them; and use the learnings in their own situations. Library staff members can use the kits as professional development and current awareness tools. Committees and task forces can use them to begin a review of current practices. And the Kits can identify other persons or places to contact for further information. Back-up files in the SPEC office also are available for loan to member libraries. In addition, SPEC will conduct on-demand surveys or analyses geared specifically for a single library.

EVALUATION

Kit Title/Number _____

1. Which uses did the library make of this Kit?

2. Please indicate how useful the Kit was for these purposes.

☐ Very Useful ☐ Quite Useful ☐ Somewhat Useful ☐ Not Useful

3. Do you have suggestions for this Kit or for future Kits?

(optional)

NAME _____

LIBRARY _____

PHONE _____

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TECHNICAL SERVICES COST STUDIES IN ARL LIBRARIES
#125, June 1986

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Survey

OFFICE OF MANAGEMENT STUDIES

ASSOCIATION OF RESEARCH LIBRARIES • (202) 232-8656

TO: SPEC Liaisons February 3, 1986

FROM: SPEC Center, Maxine Sitts and Maxine
Heidi Lee Hoerman, Montana State University Library

RE: Enclosed Survey on Technical Services Cost Studies
(Three-Year Update)

Accounting for the costs of technical services operations has long been a concern of library managers. This concern has intensified in recent years as libraries have dealt with major challenges such as automation and consortium membership. If this first survey of 1986 looks familiar to you, it's because it is patterned after a survey first conducted in April 1982 that led to SPEC Kit #89. At that time 81 out of 113 ARL members responded to our call for documents. We are now updating that information, looking at activities over the past three years, to produce a SPEC Kit in Spring 1986.

Although published studies of technical services costs in research libraries have been rare, we continue to believe that ARL members have carried out a number of new, sound studies. Some research libraries have conducted wide-ranging cost studies of their operations over the years. Other administrators are looking for useful examples as guides to fruitful study of their own institutions. In many cases, librarians are seeking both specific data for comparative purposes, and methodologies that will allow them to generate their own local data in an authoritative manner.

Please pass on this survey to the person(s) most knowledgeable about technical services costs in your library and ask them to respond by February 25, 1986. If you wish a copy of the library's previous responses from 1982, you can request one from Heidi at the phone number below. We do wish to have as many responses as possible -- so we can report to you on developments since the 1982 survey. **However, if responding to this survey is unduly burdensome, we ask that you answer Questions 1 and 6, and return it to the address at the end of the survey.** Where desired, the anonymity of institutions can be preserved.

Please feel free to contact either Heidi Lee Hoerman, Collaborative Research-Writer, at 406 994-5311 (Montana State University) or Maxine Sitts at 202 232-8656 (OMS) if you have questions.

OFFICE OF MANAGEMENT STUDIES

ASSOCIATION OF RESEARCH LIBRARIES 1527 New Hampshire Avenue, N.W., Washington, D.C. 20036 • (202) 232-8656

TECHNICAL SERVICES COSTS SURVEY (Three-Year Update)
FEBRUARY 3, 1986

This survey updates information from your library gathered during a survey of the same name in April 1982. Many of the questions are similar, so that researchers can compare results and analyze changes over the past three years. We are particularly interested in documentation that will help research and academic libraries learn HOW cost studies are planned and conducted. We are not interested in actual cost figures, and we will delete your library's name from documents, if you so note.

Please enclose documents such as:

*** Data collection instruments and explanatory materials

*** Discussion documents explaining such studies to the library staff or the parent institution administration, either in preparation for the study or discussing its findings

*** Worksheets, methodological discussion documents from staff officers assigned to the study, actual results where feasible

*** Statements by budget, systems, or planning officers on the usefulness of various cost-study approaches, e.g., top-down vs. bottom-up, sampling vs. total population techniques, relevance of baseline studies in preparation for anticipated change

Your responses might be based on studies specific to technical services, or your library may have conducted studies that include technical services as one component. **Please respond by FEBRUARY 25 to the address given at the end of the survey form.** If you wish a copy of your library's previous responses, contact Heidi Hoerman, Collaborative Research-Writer, at 406 994-5311 (Library, Montana State University).

RESPONDENT NAME _____ PHONE (A.C.) _____

LIBRARY/INSTITUTION _____

1. Has your library conducted a cost study of a technical services department or function within the past three years? (stand-alone, or part of a larger cost study)

_____ YES, in _____ (year)
_____ NO (Review remaining questions for possible response, respond to Question 6, and return survey)
_____ IN PLANNING STAGE. Comment briefly.
_____ OTHER. Comment briefly.

2. If YES, for what reasons? Check as many as applicable and enclose documentation.

_____ To gain baseline information for anticipated change
_____ To gain baseline information for funding requests
_____ To assist in effecting a specific organizational change
_____ In preparation for an anticipated automation implementation
_____ To meet information requirements of parent organization, accrediting agency, or other. Specify _____
_____ Other. Comment briefly:

 RESPONDENT_____

3. Who performed the cost study?

_____ Library staff
_____ Outside agency/consultant
_____ Combination of staff and outside agency

4. If performed by staff, enclose documentation on the type of staff assigned to the project, (e.g., single staff member, committee, budget officer or technical services staff, supervisory/administrative or non-supervisory/administrative librarians) and on the training they received. Or describe briefly below.

5. In retrospect, of what help was the study? Enclose documents on study results, or comment briefly below.

_____ NONE
_____ SOME
_____ VERY MUCH
_____ ESSENTIAL

COMMENTS: _____

6. Do you see a need for comparative cost data from peer institutions in size or mission to aid libraries in management their own operations?

_____ YES
_____ NO

COMMENTS: _____

Please mail responses and documents by February 25, 1986 to Heidi Hoerman, Collaborative Research-Writer, Library, Montana State University, Bozeman, Montana 59717-0022.

ARL TECHNICAL SERVICES COSTS SURVEY (Three-Year Update), February 3, 1986.

Summary of survey data.

I. The following questions were asked:

1. Has your library conducted a cost study of a technical services department or function within the past three years? (stand-alone or part of a larger cost study)
2. If YES, for what reasons?
3. Who performed the cost study?
4. If performed by staff, enclose documentation on the type of staff assigned to the project, (e.g., single staff member, committee, budget officer or technical services staff, supervisory/administrative or non-supervisory/administrative librarians) and on the training they received.
5. In retrospect, of what help was the study?
6. Do you see a need for comparative cost data from peer institutions in size or mission to aid libraries in management of their own operations?

There were 76 responses from the 118 ARL libraries.

II. Crosstabulation of Questions 1 and 6:

Results of 1986 survey

		See need for comparative cost data?			
		Yes	No	No answer	TOTALS
Conducted study in last 3 years?	Yes	15	3	0	18 (24%)
	Planning	3	0	0	3 (4%)
	No	42	10	3	55 (72%)
	TOTALS	60	13	3	76 (100%)
		(79%)	(17%)	(4%)	(100%)

Results of 1982 survey

See need for comparative data?

		Yes	No	No answer	TOTALS
Conducted study in last 3 years?	Yes	24	3	0	27 (33%)
	No	36	9	9	54 (67%)
	TOTALS	60 (74%)	12 (15%)	9 (11%)	81 (100%) (100%)

III. For those answering YES or IN PLANNING STAGE to question 1 (n=21)

question 2 asked what the purpose of the study was:

To gain baseline information for anticipated change	11 (53%)
To gain baseline information for funding requests	7 (34%)
To assist in effecting a specific organizational change	4 (19%)
In preparation for an anticipated automation implementation	7 (34%)
To meet information requirements of parent organization, accrediting agency, or other	5 (24%)
Other purposes	9 (43%)

question 3 asked who performed the cost study:

Library staff	17 (81%)
Outside agency/consultant	1 (5%)
Combination of library staff and an outside agency/ consultant	3 (14%)

question 4 asked for a further descriptions of library staff used:

Assistant Director for Technical Services	3 (18%)
Assistant Director for Technical Services and Technical Services Department Heads	2 (12%)
Technical Services Department Heads	2 (12%)
Technical Services Staff	1 (9%)
Technical Services Staff and Library Business Officer	1 (9%)

Head of Monographs Department, Head of Serials Department and Lead Systems Analyst	1 (9%)
Catalog librarian	1 (9%)
Head of Public Services, Budget Officer and a Staff Member	1 (9%)
Administrative Intern	1 (9%)
Level of staff not specified	4 (23%)

question 5 asked of what help was the study:

None	0 (0%)
Some	9 (43%)
Very much	4 (19%)
Essential	7 (34%)
No response	1 (5%)

IV. Some estended responses to question 5, "In retrospect, of what help was the study?

a. "We consider that a study of technical services costs is only of use if conducted on an ongoing basis. It is essential to monitor costs in order to plan for the most efficient deployment of resources."

b. "Without more information about workflows or local requirements, the usefulness of the information was limited." (from a library which had used an outside agency/consultant)

c. "The analysis of the data was the most difficult part. The study resulted in enough raw data that the resources of an IBM mainframe using SAS were strained. Analysis of the output from the SAS analysis was also extremely time-consuming.

d. "Useful in planning staffing changes with online catalog implementation and potential personnel budget cuts."

e. "Administratively it is essential to understand what each task in technical services costs to effectively plan, evaluate, budget, analyze or review. As any activity or function in technical services changes the costs related to that activity or function should be an integral part of the planning, programming, budgeting process."

f. "The analyses of the past two years has given greater credibility to the amounts paid by the libraries."

V. Some extended responses to question 6, "Do you see a need for comparative cost data from peer institutions in size or mission to aid libraries in management of their own operations?"

FROM LIBRARIES RESPONDING YES:

a. Significant problems in comparability of definitions, especially of personnel functions ... I suggest that the categorizations of librarians used in the ARL Salary Survey become at least a starting point."

b. " ... main interest in comparative data is in getting some indication of the comparative efficiency of our technical services operation. For this purpose cost data is not always ideal. The substantial range of differences that exists in labor costs, classification levels of staff used, and in the demographics of particular library staffs seem to me to make cost data difficult to interpret."

c. "Since even peer institutions differ so much from one another, cost comparisons are difficult to understand and apply. A standard format would be a help in this regard. Many overall costs are fixed and cannot be greatly affected. One must take care that the cost of undertaking the study does not exceed the potential benefit."

d. "Cost comparisons will be useful only is the libraries reporting define how their studies were conducted and what was and was not included in the studies. Unless we know what cost elements are included in a study the basis for comparison is invalid."

e. "In general, I respond yes. In practice I do not believe it will work. Even with very constrictive definitions and categories there will be more footnotes to the data than there will be data. There are so many actual or perceived variations that many will be reluctant to provide data and many would never officially use the figures."

f. "There are many good reasons for differences in processing costs. Simple bottom line comparisons are not informative."

g. "If we are able to use similar methodologies using like cost centers."

h. "Cost data without some information on local practices, quality control methods and local standards is of little use."

i. "The value of the data will be in direct proportion to the standardization of the data and the clear definition of terminology."

j. "For meaningful comparison with other institution(s) appropriate and adequate background data must be available on the institution(s) being compared to. In search for the ultimate--the simple, economical, accurate method for a cost study--it is useful to see methodologies followed elsewhere."

FROM LIBRARIES RESPONDING NO:

a. "Ways of doing things differ so from institution to institution that it always turns out to be comparing apples and oranges."

b. "These studies which present such data usually invite inaccurate or misleading comparisons."

c. "It is not possible to compile valid data that can be used for inter-institutional comparison ... only intrainstitutional comparative data can be compiled on a time (i.e. chronological sequence) axis."

d. "Apples and pears."

e. "Some very specific elements, e.g. 'copy cataloging with authority work,' 'filing into a dictionary catalog with ALA filing rules,' might be useful."

f. "There is too much variation ... to be able to meaningfully compare figures between peer institutions. Of greater interest and utility is information on methodology."

LIBRARY RESPONDING NEITHER YES NOR NO:

a. "Because cost studies of technical services functions are not really comparative (cannot take into consideration all the elements which might make them so) and because the results can be used to bring to bear the wrong linds of pressures for the wrong reasons, it would seem that a forum about comparative methods of accomplishing the various functions might be more useful in arriving at efficient operations, which should be the objective of cost studies."

spec

Nov.-Dec. 1982 #89

OMS

Systems and Procedures Exchange Center

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TECHNICAL SERVICES COST STUDIES IN ARL LIBRARIES

While accounting for the costs of technical services has long been a responsibility of library managers, this concern has become more focused in recent years as libraries have encountered major challenges such as automation, new cataloging codes, and consortium membership. Large libraries' traditional reasons for doing cost studies are those of classical good management: understanding one's operation and monitoring it with an eye to improvement. Technical services comprise a production line of a multitude of individual steps, capable of performance in a variety of ways by differentially--paid individuals. The overall process is sufficiently complex that it resists intuitive analysis; by reducing data to dollar figures, more credible statements of efficiency and effectiveness can be made.

There seems to be little assistance in the literature for managers seeking to do effective cost studies. Few large libraries report having done cost studies of major technical services operations in the past few years. It has been suggested that libraries' non-profit status has reduced the pressure for routine cost analyses. Certainly when large libraries do cost studies, it is often as a consequence of an externally-imposed stimulus. These vary widely: prospective network membership, the need to determine indirect cost rates in connection with Federal contracts, governmental reporting requirements at state and local levels, cost determinations for services to other agencies, and the potential impact of AACR2 are among the many reasons cited. In an April 1982 SPEC survey to which 81 of 113 ARL libraries responded, a third had done a study of technical services costs in the last three years; less than half of these indicated that such studies were normal and routine, or were used for general management assistance.

In contrast is the need expressed by about three-fourths of the survey respondents for comparative cost data from peer institutions as an aid in managing their own operations. Although some librarians questioned just how comparable such data could be, this pragmatic doubt did not outweigh the perceived desirability of such data. The stated need for comparability is highlighted by the considerable variations in the cost studies as exhibited in the SPEC kit, which range from terse statements of overall costs to detailed time-and-motion studies of specific operations.

The varied study formats in part reflect the differences in study purposes. The magnitude of the operation studied, its product, the use to which study results will be put, and the desired level of precision all affect the choice of methodology -- as do the skill, sophistication and purpose of the study director. Most studies attempt to present a simple statement of cost of an operation at a particular time. A few relate this cost to costs at earlier times, or to costs of similar operations at the same or another institution.

Broadly speaking there are two different, useful, approaches to cost analysis: the top-down and the bottom-up. Each is represented by examples in the accompanying kit. The top-down approach assigns categories of known expenditure to categories of known product over gross periods of time, often a fiscal year. Depending on the depth to which data are available, the technique allows estimates accurate for many purposes to be developed administratively in a short time. Thus the total cost for a library's technical

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services operation can be obtained from annual personnel, materials and equipment costs. Assumptions will have to be made (and stated) about fringe benefits, building costs, administrative overhead, and the like. Unfortunately, it is usually easier for a library to determine these data than to fix exactly what was worked on during the year (books bought, serials cataloged, titles -- or volumes -- added to the collection, backlogs diminished), which is essential if later-year cost comparisons are to be made. Similarly, costs for a department (cataloging, searching, etc.) can be obtained; costing a more specific function ("pre-catalog searching") is more difficult using this method as individuals often divide their time between functions.

The bottom-up technique calls for painstaking analysis of very specific functions (e.g. the time spent by a professional to search 10 items in a card catalog, or the time spent by a support staff level III to file a Kardex record). Such studies can be very useful when contemplating procedural changes at such levels, and some proponents believe them to be essential as a building block for determining overall costs. A very few such large-scale bottom-up studies take into account the difficulties associated with non-productive paid time (e.g. sick leave, work breaks), margin of error in extrapolation from study sample to total population, and the Hawthorne effect. In general, as the scope of the study is widened, the detailed approach becomes harder to control.

Inevitably, the two approaches merge in many studies. Each has its distinct uses. Where a change is envisioned in the details of a process (e.g., invoice routing) or a product (e.g., inclusion of certain tracings), the bottom-up approach can give guidance on specific costs associated with alternatives. Where a major change in process is involved — e.g., automation of acquisitions -- the detailed functions will change so radically that only an overall approach is possible. Where a major change in the product is envisioned (e.g., AACR2 implementation, or the purchase of microfilm instead of print for a large portion of materials), it is arguable which method is best. Where historical or comparative data will be desired, it is probable that, as the time period increases, the larger-scale should be the analysis. That is, it may be possible to compare this year's filing costs with last year's, but over five years (or across institutions) the differences in technique and staffing may be so great that the costs of catalog maintenance, however defined, may be the more useful point of comparison.

The need for comparability, either with one's own previous data or with that of a peer library, has been widely acknowledged both in the present survey and by ARL directors at public forums over the past few years. Without comparable figures as a benchmark, a stated cost stands alone in a void, resistant to analysis. Data from the past can show the effects of organizational change, giving guidance to a capable manager. Comparable data from a peer institution will force the perceptive manager to re-examine local procedures to determine reasons for cost differences--and re-examination will almost always lead to improvements. The development of standards of comparability is yet to be done. There is some thought that time elements are more useful for comparison than cost elements. There is not yet consensus on what defines many work processes that might be compared, e.g., copy cataloging; nor even on certain basic definitions such as of continuations, or when titles and when volumes are the units of productivity. Until such definitions are standardized, it will be well if even internal cost studies make explicit as many of their definitions and assumptions as possible, thus extending their usefulness both in time and for different audiences.

SPEC Kit #89 (November-December 1982, 104 pages) on Technical Services Cost Studies contains four examples of top-down studies, and three examples of bottom-up studies, and a summary of SPEC Survey data. SPEC Kits are available mainly by subscription.

PETER S. GRAHAM, HEAD, BOOK ACQUISITIONS DEPARTMENT,
COLUMBIA UNIVERSITY LIBRARIES, PREPARED THIS FLYER/KIT
AS PART OF THE OMS COLLABORATIVE RESEARCH/WRITING PROGRAM.

Procedures

Statistical Questionnaire on Cataloguing Activities in Québec University Libraries and the Bibliothèque Nationale du Québec

GUIDE AND DEFINITIONS

13

Statistics Task Force
Library Subcommittee
Conference of Rectors and Principals
of Québec Universities

Introduction

The Conference of Rectors and Principals of Québec Universities (CREPUQ) annually gathers statistical data on Québec university libraries and on the Bibliothèque nationale du Québec. This administrative data is collated and distributed to the directors of libraries with the aim of fostering improvements in the services offered to the university community.

The questionnaire allows for measurement of the main cataloguing activities of diverse institutions in order to obtain information on the types, sectors, methods of operation and costs of these activities.

It is composed of two sections. The first section is concerned with human, financial and physical resources annually allocated to cataloguing activities. The second section is concerned with the activities themselves.

The questionnaire covers the time span from June 1 to May 31 of each year. It is distributed annually during June and should be returned to the secretariat of CREPUQ not later than October 1 of each year to the following address:

La Conférence des recteurs et des principaux des universités du Québec
C.P. 124, succursale Place Desjardins
Montréal, Québec H5B 1B3
Tél.: (514) 288-8524

LAVAL UNIVERSITY

Guide and definitions

The activities of cataloguing include all functions carried out from the moment an item is received to the time of its shelving.

More specifically, it includes:

— The functions necessary for the assembly and updating of a library catalogue;

— The functions necessary for the shelving of an item (i.e. the physical preparation).

The objectives of the questionnaire require that the tasks from the following activities be excluded:

— Binding;

— Organizing of a data bank for the loan of items;

— Preparing of lists of special documents, specialized bibliographies, etc.

The objective of this questionnaire is to gather standardized statistics on the significant activities of cataloguing and on the factors such activities incur. It does not aim to discover:

— The condition of the collections (number of items shelved or weeded according to the categories required for these types of statistics);

— Employee performance;

— All or the individual steps regarding the line work of cataloguing functions (i.e. cards produced, cards filed, call numbers written, etc.).

So that the collected statistics may be effectively compared, the questionnaire includes elements that allow the cataloguing level used to be known.

The definitions and instructions that follow are arranged in the order of items in the statistical questionnaire.

PART ONE

Data on Resources

The first section of this questionnaire aims to establish the level of cataloguing as well as the costs incurred by the resources (human, financial and physical) allocated to cataloguing functions.

1. Resources

Total human, financial and physical resources allocated annually to cataloguing functions.

1. **Human resources:** personnel assigned, partially or exclusively, to functions concerning cataloguing.

   Note: Full time personnel partially engaged in cataloguing functions should be entered in the "Full time permanent positions" column according to the time spent on cataloguing activities. (ex: 0.5 position)

   Full time permanent positions: Full time positions officially recognized in the budget, including vacant positions.

   Part time permanent positions: Permanent positions, including those temporarily vacant, that require from the employee a number of hours fewer than those established for full time positions either on a weekly, monthly or annual basis.

   Note: Indicate the total in full time equivalent (total number of hours worked divided by the total number of hours worked by a full time employee)

   Vacant permanent positions: Permanent positions, full time or part time not filled.

   Note: This data has already been included in the columns of full time permanent and part time positions but should be repeated in this column.

   Temporary and casual employees: Casual personnel hired for a limited period.

   Note: Indicate the total in full time equivalent. The professional staff partaking in the functions of cataloguing should include, up to the highest level, the technical services head (or equivalent) concerned predominantly with these functions.

2.1.1 **Salaries**

Do not provide this data.

Note: This data will be calculated for each institution according to the formula:

(Npp X Spp) + (Nbt X Sbt) + (Nps X Sps) = M

N = Number of full time equivalent positions

S = Average salary for the total of libraries as calculated from the annual data collected by CREPUQ

M = Total salaries allocated to cataloguing

LAVAL UNIVERSITY

pp = Professional staff
bt = Library technicians
ps = Support staff

22 **Expenditures for equipment and services**

The expenses concerning this section should include recurring costs only. Exclude installation costs, implementation or uncommon costs such as those incurred by a "Database walk."

221 **Equipment**

Note: Include only annual rental and/or maintenance charges. If such equipment is used on a part time basis for cataloguing functions, prorate annual costs.

222 D **Subscription to print materials**

Indicate the amount allocated for the acquisition of print materials utilized for cataloguing tasks, for example: *Library of Congress NUC Books*, *Library of Congress Classification Schedules: A Cumulation of Additions and Changes*, different authority files such as *LC Name Authorities*, *Canadiana*, etc...

224 **Supplies**

Note: Include only supplies used specifically for cataloguing functions (e.g. cataloguing forms, computer paper, labels, etc.). It is not necessary to include the costs of regular office supplies (pencils, paper, etc.)

3 **Physical resources**

Note: Include the number of types of equipement used exclusively or partially for cataloguing functions.

PART TWO

Data concerning cataloguing activities

Data to be collected is concerned with four primary sectors of activity: Bibliographic record creation, subject analysis, data entry and modification of bibliographic records.

1. **Level of cataloguing**

The information contained in this section outlines the framework within which the functions of cataloguing are performed.

1.1 **Bibliographic description**

To establish the level of bibliographic description applied by your library, refer to the following paragraphs taken from AACR2.

1.0D1. First level of description. For the first level of description, include at least the elements set out in this schematic illustration:

Title proper / first statement of responsibility, if different from main entry heading in form or number or if there is no main entry heading. — Edition statement. — Material (or type of publication) specific details. — First publisher, etc., date of publication, etc. — Extent of item. — Note(s). — Standard number.

See 1.1B, 1.1F, 1.2B, 1.3, 1.4D, 1.4F, 1.5B, 1.7, 1.8B.

1.0D2. Second level of description. For the second level of description, include at least the elements set out in this schematic illustration:

Title proper (general material designation) = parallel title: other title information / first statement of responsibility; each subsequent statement of responsibility. — Edition statement / first statement of responsibility relating to the edition. — Material (or type of publication) specific details. — First place of publication, etc.: first publisher, etc., date of publication, etc. — Extent of item: other physical details; dimensions. — (Title proper of series / statement of responsibility relating to series, ISSN of series; numbering within the series. Title of subseries, ISSN of subseries; numbering within subseries) — Note(s). — Standard number.

1.0D3. Third level of description. For the third level of description, include all elements set out in the following rules that are applicable to the item being described.

2. **Bibliographic record creation**

A record displays the entirety of information (headings, body of the entry, call numbers, tracings, etc.) serving to describe an item.

With an automated system, each record is assigned unique number or code.

A record is not **created** if only supplementary information (number of copies, added volumes, new locations) is added to a record previously established. In such cases, a different bibliographic record is not made.

However, it is necessary to consider as **created**, records established to indicate different editions of the same document or editions produced in different formats (microfiches, microfilms, etc.)

A- **Types of cataloguing**

It is necessary to distinguish between the following types of cataloguing:

— **Current cataloguing:**

Records established for items added to existing collections (regardless of how the items were acquired: purchased, received as gifts, received on exchange, etc.)

— **Recataloguing:**

Records established for items already catalogued. The corrections to be made to the previously established records require the creation of new records.

— **Brief cataloguing:**

Records established according to a minimum of information to be included and not subjected to the usual cataloguing procedures of the library.

B- **Processing methods**

A record is considered **original** when the information held in such a record is established firsthand by the cataloguer.

A record is considered **derived** when the information held in such a record is established from a record previously created: Record sources (LC, BNC, BNQ, NLM, etc.), user records from the library, records from the *National Union Catalog*, etc.

C- **Item categories**

The following categories were retained:

— Printed materials;

— Microforms;

— Non-print materials:

Include all other categories except those previously mentioned, most notably: audio-visual materials, phonograph records, multimedia items, games, etc.

For printed materials or microforms, it is necessary to indicate if they are:

— Monographs:
A nonserial item, i.e., an item either complete in one part or complete, or intended to be completed, in a finite number of separate parts.

AACR2 p. 568. Glossary.

— Serials:
A publication in any medium issued in successive parts bearing numerical or chronological designations and intended to be continued indefinitely. Serials include periodicals; newspapers; annuals (reports, yearbooks, etc.); the journals, memoirs, proceedings, transactions, etc., of societies; and numbered monographic series.

AACR2 p. 570 Glossary.

Note: In the case where description policy differs from the above quoted definitions, categorize the records according to the bibliographical level code used. (m. = monograph; s = serial)

3.1 **New descriptors created**

For libraries where subject analysis is made from a controlled vocabulary, indicate the number of newly established descriptors which have been added to the core list from which subject analysis is made (ex. *LC Subject Headings, Thésaurus CADRE, etc.).*

3.2 **Descriptors applied**

Indicate the number of descriptors applied according to a set of records created regardless as to whether the descriptors are new or have been utilized.

4. **Data entry**

A- **Processing methods**

A data record is considered **original** when data cannot be acquired from a data record previously input.

A data record is considered **derived** when data is acquired from a data record previously input or transfered from another data bank.

Note that a record may be created by derived methods (e.g. transcription of a *National Union Catalog* record to an input sheet) and as such its input is original.

B- **Data record conversion**

Conversion of a data record occurs when data acquisition is made from a file previously established by the institution in a non-automated fashion. "RECON projects" is the term normally utilized when refering to the above.

5.1 **Records edited**

Identify corrections that correspond to the category "Reclassification" and the category "Others" (corresponding with one or any of the following classes: authors, collections, descriptors, etc.).

5.2 **Records updated**

Indicate the number of records for which the following corrections have been made: Added copies, additional volumes added to a multivolume set, change of location.

5.3 **Records cancelled**

Indicate the number of records pulled from the catalogue (Weeded, lost, etc.).

Completed by: Name of person who completed questionnaire.

Approved by: Name of director of library.

CONFERENCE OF RECTORS AND PRINCIPALS OF QUEBEC UNIVERSITIES

LIBRARY SUBCOMMITTEE

Statistics questionnaire on cataloging activities in Quebec university libraries and the Bibliotheque nationale du Quebec

CATALOGING ACTIVITIES

PART I RESOURCES

19 ___ 19 ___

NAME OF LIBRARY AND INSTITUTION

NAME OF DIRECTOR OF THE LIBRARY

1 Human resources: PERSONNEL ASSIGNED TO CATALOGING FUNCTIONS

	FULL TIME PERMANENT POSITIONS	PART TIME PERMANENT POSITIONS	VACANT PERMANENT POSITIONS (may 31)	TEMPORARY AND CASUAL EMPLOYEES
1.1 PROFESSIONAL STAFF				
1.1.1 LIBRARIANS				
1.1.2 OTHER				
1.1.3 SUB-TOTAL ▶				
1.2 SUPPORT STAFF				
1.2.1 LIBRARY TECHNICIANS (or equivalent)				
1.2.2 OTHER (clerical staff, secretaries, ect.)				
1.2.3 SUB-TOTAL ▶				
1.3 TOTAL (1.1.3 + 1.2.3) ▶				

2 Financial Resources

2.1 HUMAN RESOURCES

2.1.1 SALARIES: Do not provide this data. This information will be calculated from data given in 1 HUMAN RESOURCES. See guide 2.1.1

2.2 EXPENDITURES FOR EQUIPMENT AND SERVICES

2.2.1 EQUIPMENT (rental and maintenance) - include only rental and maintenance costs

A. MAINFRAME COMPUTERS

B. MINI-COMPUTERS

C. MICRO-COMPUTERS

D. TERMINALS AND MODEMS

E. PRINTERS

F. PHOTOCOPIERS

G. MICROFORMS READERS

H. OTHER (specify)

Σ. SUB-TOTAL ▶

2.2.2 COMMUNICATIONS AND SERVICES

A. TELECOMMUNICATION CHARGES

B. SYSTEM USE CHARGES (storage, connect-time charges, editing, etc.)

C. SUBSCRIPTIONS TO SERVICES (MARC tapes, MEARS etc.) (specify)

D. SUBSCRIPTIONS TO PRINT MATERIALS (LC Additions & Changes, NUC, Canadiana, etc.)

E. OTHER (specify)

F. SUB-TOTAL ▶

2.2.3 COMPUTER GENERATED PRODUCTS

A. CARDS

B. LABELS

C. COM CATALOGS

D. PRINTED LISTS

E. UNION CATALOGS

F. SUB-TOTAL ▶

2.2.4 SUPPLIES

SUPPLIES USED EXCLUSIVELY IN CATALOGING (printer paper, forms, labels, etc.)

2.2.5 TOTAL (2.2.1 Σ, 2.2.2 F, 2.2.3 F, 2.2.4) ▶

3 Physical resources

equipment used exclusively or partially for cataloging

	NUMBER	
	Exclusive	Shared
A. MAINFRAME COMPUTERS		
B. MINI-COMPUTERS		
C. MICRO-COMPUTERS		
D. TERMINALS AND MODEMS		
E. PRINTERS		
F. PHOTOCOPIERS		
G. MICROFORMS READERS		
H. OTHER (specify)		

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4. Supplementary information

4.1 COM CATALOG

- Describe each COM product separately.

DESCRIPTION	FREQUENCY OF CUMULATION	FREQUENCY OF SUPPLEMENTS	NUMBER OF COPIES

4.2 LISTS

- Describe each list separately.

DESCRIPTION	FREQUENCY OF CUMULATION	FREQUENCY OF SUPPLEMENTS	NUMBER OF COPIES

Completed by _____ Date _____

Approved by _____ Date _____

CONFERENCE OF RECTORS AND PRINCIPALS OF QUEBEC UNIVERSITIES

LIBRARY SUBCOMMITTEE

LAVAL UNIVERSITY

Statistics questionnaire on cataloging activities in Quebec university libraries and the Bibliothèque nationale du Québec

CATALOGING ACTIVITIES | **PART II ACTIVITIES** | 19 19

NAME OF LIBRARY

1 Level of cataloging

1.1 BIBLIOGRAPHIC DESCRIPTION

A. With reference to the three levels of description established in AACR2 (1.001, 1.002, 1.003), specify which level most closely matches the type of bibliographic description used in your institution.

☐ LEVEL 1 ☐ LEVEL 2 ☐ LEVEL 3

B. If different levels of description are used for some collections or types of documents, please specify the collections or types of documents and the level of description used.

1.2 CLASSIFICATION

Specify collections or types of documents that are not classified or partially classified.

1.3 SUBJECT ANALYSIS

A. Which system(s) of subject analysis are used in your library?

☐ DESCRIPTORS
☐ KWIC INDEX
☐ SUBJECT HEADINGS
☐ OTHER (specify)

B. Specify collections or types of documents that are not analysed for subject content.

1.4 AUTHORITY FILES

A. Does your library maintain authority files?

☐ YES ☐ NO

B. Specify the elements for which authority files are maintained, and indicate the degree of maintenance.

a) Authors	☐ COMPLETE	☐ PARTIAL	☐ NOT AT ALL
b) Series	☐ COMPLETE	☐ PARTIAL	☐ NOT AT ALL
c) Corporate headings	☐ COMPLETE	☐ PARTIAL	☐ NOT AT ALL
d) Subjects	☐ COMPLETE	☐ PARTIAL	☐ NOT AT ALL

C. Are authority file maintenance operations automated?

☐ COMPLETELY ☐ PARTIALLY ☐ NOT AT ALL

1.5 UNCATALOGED DOCUMENTS

Specify collections or types of documents which are not cataloged.

1.6 SPECIAL PROJECTS

Describe any special cataloging projects undertaken by your library in the current year (for example, reclassification of a specific collection, updates to bibliographic records following a collection inventory, etc.).

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2. Bibliographic record creation

	ORIGINAL	DERIVED
2.1 CURRENT CATALOGING		
A. Printed materials		
a) Monographs		
b) Serials		
B. Microforms		
a) Monographs		
b) Serials		
C. Non-print materials		
D. TOTAL (A+B+C)		
E. TOTAL (ORIGINAL AND DERIVED)		
2.2 RECATALOGING		
A. Printed materials		
a) Monographs		
b) Serials		
B. Microforms		
a) Monographs		
b) Serials		
C. Non-print materials		
D. TOTAL (A+B+C)		
E. TOTAL (ORIGINAL AND DERIVED)		
2.3. BRIEF CATALOGING		
A. Printed materials		
B. Microforms		
C. Non-print materials		
D. TOTAL: (A+B+C)		

3. Subject analysis

3.1. NEW DESCRIPTORS CREATED	
3.2. DESCRIPTORS APPLIED	
A. Number of descriptors	
B. Number of bibliographic records	

4. Data entry

	ORIGINAL	DERIVED
4.1 NEW RECORDS CREATED		
TOTAL (ORIGINAL AND DERIVED)		
4.2 RECORDS CONVERTED		
TOTAL (ORIGINAL AND DERIVED)		

5. Modification of bibliographic records

5.1 RECORDS EDITED	
A. Reclassification	
B. Other	
5.2 RECORDS UPDATED	
5.3 RECORDS CANCELLED	

COMPLETED BY	DATE	APPROVED BY	DATE

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UNIVERSITY OF WATERLOO

MANAGEMENT INFORMATION SYSTEM (M.I.S.)

OUTLINE OF METHODOLOGY USED

An attempt has been made to display a detailed estimate of the Library resources allocated to various programs or functions, the outputs achieved, and the resulting unit transaction costs.

The unit transaction costs have been determined by using macroanalysis rather than microanalysis - in other words, the physical outputs have been related to total costs for a given fiscal period for each of the Library programs being studied.

Two major cost centers have been segregated and identified:-

a) processing centers (Support Services Departments)
b) Service centers (Reader Services Departments)

salary and non-salary operating costs can be classified as direct costs since they vary in direct proportion with the level of output. These costs are relatively easy to identify and quantify.

Overhead costs represent the most difficult and troublesome area in cost analysis. Examples of overhead costs are:- supervision, indirect labour, indirect materials, space and the maintenance of space, heat/hydro, the costs to the Library of University administration. Supervisory overhead as well as indirect labour and indirect materials have been included in the cost aggregates. An allocation factor covering the other overhead costs has been provided by the Operations Analysis Office.

Two periods have been studied: i.e. the last quarter of fiscal 1979/80 (February - April 1980), and the first quarter of the current fiscal year (May - July 1980). In each quarterly analysis, the actual total costs have been shown for each Library program under study. The output data have been provided by Nancy Allee. In some cases, a weighting of the statistical data has been done. For example, a weighting factor of 1.8 has been established for Interlibrary Loan material borrowed in order to compensate for the longer processing time for borrowed material as compared to loaned material.

It should be emphasized that the unit transaction costs arrived at are only estimates, and they should be treated as such.

If the M.I.S. cost analysis concepts are approved it is suggested that the M.I.S. Summary be prepared each quarter to form an integral part of the Financial Statement for the Operating Budget.

By analysing the information contained in the M.I.S. Summary of unit costs it should be possible to answer the following questions:-

1. What is the unit cost of production?
   Is it going up or down?

2. What is the production rate per function per Library department?

3. How does the cost of similar functions compare?

4. Is the investment in a particular program or library function justified by the benefits realised through use of materials? Should resources be re-allocated?

MANAGEMENT INFORMATION SYSTEM (M.I.S.)

SUMMARY OF UNIT COSTS, MACROANALYSIS

PERIOD: MAY 1, 1985 - JULY 31, 1985

CATEGORY	TRANSACTION	DESCRIPTION OF COSTS	ACTUAL COSTS	OUTPUT DATA	UNIT TRANSACTION COST
1. Collections Development	Unit cost re - ordering one volume of titles	Salary and non-salary operating costs, Direct and overhead costs	$87,298	4,532	Unit cost per title ordered : $19.37
2. Acquisition of Monographs	Unit cost re: acquiring one volume of titles	same as above	$116,360	9,392	Unit cost per physical item received $12.45
3. Acquisition of Serials	Unit cost re: acquiring a given volume of serials	same as above	$118,435	54,682	Unit cost per physical item received $2.18
4. Cataloguing of Monographs	Unit cost re: cataloguing a given number of items	same as above	$417,345	11,807	Unit cost per physical item catalogued $35.52
5. Cataloguing of Serials	Unit cost re: cataloguing or recataloguing a given number of titles	same as above	$20,113	303	Unit cost per title catalogued/recatalogued $67.42
6. Information Services	Unit cost re: a given volume of reference/information service activity	same as above	$61,375	Reference questions #49,322 Reference questions /queries 52,335	Unit cost per information unit-reference questions $1.24 Unit cost per information unit - reference question/ queries $1.17
7. Circulation of Library Material	Authorized removal of material from Library premises or reserves areas	same as above	$326,866	102,017	Unit cost per circulation transaction $3.22
8. Interlibrary Loans	Unit cost re - a given item lent or borrowed	same as above	Lending $16,873 Borrowing $30,284	Lending 1,756 Borrowing 2,288	Unit cost per item lent $9.66 Unit cost per item borrowed $13.31

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UNIVERSITY OF WATERLOO

UNIVERSITY OF WATERLOO LIBRARY

MANAGEMENT INFORMATION SYSTEM

Quarterly Summaries of Unit Operating Costs
(April 1980 - October 1985)

	Acqu.		Cat.		Ref.			I.L.L.	
Sel.	Mon.	Ser.	Mon.	Ser.	Quest.	Quest/Quer.	Circ.	Lent	Borr.
13.16	9.67	1.66	20.97	59.38	0.61	0.54	0.92	7.68	5.80
11.38	8.95	1.71	19.47	58.99	0.80	0.68	1.29	7.66	7.31
11.61	10.25	1.93	23.57	77.45	0.56	0.47	1.18	8.22	7.52
13.75	9.67	2.09	16.84	110.91	0.49	0.43	0.99	8.46	6.59
9.85	9.61	1.83	15.70	76.67	0.53	0.45	0.99	7.17	5.37
10.19	4.66	2.93	21.65	80.76	1.04	0.90	2.16	9.39	7.09
10.46	9.08	1.66	19.23	63.50	0.62	0.53	1.47	7.72	7.07
11.93	9.08	2.06	21.55	107.40	0.54	0.46	1.36	8.54	7.27
11.66	9.01	1.95	19.78	143.03	0.57	0.49	1.24	6.87	5.85
13.57	10.28	2.12	24.37	396.58	0.82	0.78	2.38	6.84	10.69
14.35	11.68	2.46	27.42	76.61	0.49	0.45	2.26	7.28	12.08
9.84	12.23	2.10	26.70	64.82	0.45	0.41	1.29	8.53	11.33
10.81	9.65	2.47	15.86	102.18	0.45	0.41	1.20	7.72	10.51
13.22	11.17	2.86	24.57	86.17	1.01	0.94	2.76	9.27	11.06
12.27	11.06	2.85	27.59	99.45	0.54	0.50	1.45	9.23	10.90
13.47	10.78	2.93	31.11	91.67	0.50	0.47	1.16	8.42	13.79
11.32	10.16	2.77	21.92	61.56	0.48	0.46	1.11	8.83	10.44
14.39	10.59	3.92	27.56	61.90	0.85	0.80	2.39	8.83	11.66
13.77	10.61	2.38	28.01	97.09	0.54	0.50	1.58	11.27	13.50
4.15	11.26	3.91	26.99	87.07	0.52	0.49	1.51	9.74	12.78
39.98	14.28	2.67	22.82	56.64	0.50	0.48	1.42	9.10	11.77
19.37	12.45	2.18	35.52	67.42	1.24	1.17	3.22	9.66	13.31
28.58	13.13	1.69	29.51	48.44	0.76	0.74	2.38	12.39	15.74
					LATEST 12-MONTH AVERAGE				
22.77	12.78	2.61	28.71	64.89	0.76	0.71	2.11	9.71	13.39
					MEDIAN				
23.98	12.79	2.43	28.25	62.23	0.64	0.54	1.90	9.68	13.40

M.I.S.

SUMMARY OF UNIT OPERATING COSTS (ANNUAL MEDIANS)

PERIOD	ACQUISITIONS		CATALOGUING		REFERENCE			I.L.L.	
	SEL.	MON.	SER.	MON.	SER.	QUE.	QUEST/QUE.	CIRC.	LENT	BORR.
Jan. 81 - Oct. 81	$10.33	$ 9.35	$1.96	$18.04	$78.72	$0.58	$0.49	$ 1.23	$ 8.09	$ 6.83
Jan. 82 - Oct. 82	12.75	9.68	2.09	22.96	125.22	0.56	0.48	1.81	7.08	8.98
Jan. 83 - Oct. 83	11.54	11.12	2.66	25.64	92.81	0.50	0.46	1.37	8.88	10.98
Jan. 84 - Oct. 84	13.62	10.60	2.85	27.79	76.74	0.52	0.49	1.38	8.83	12.58
Jan. 85 - Oct. 85	23.98	12.79	2.43	28.25	62.03	0.64	0.60	1.95	9.68	13.05

UNIVERSITY OF WATERLOO

LEC #3 (86.01.29)
item: IVG

M.I.S.

SUMMARY OF UNIT OPERATING COSTS (ANNUAL AVERAGES)

PERIOD	SEL.	ACQUISITIONS MON.	ACQUISITIONS SER.	CATALOGUING MON.	CATALOGUING SER.	REFERENCE QUE.	REFERENCE QUEST/QUE.	CIRC.	I.L.L. LENT	I.L.L. BORR.
Jan. 81 - Oct. 81	$11.06	$ 8.26	$ 2.13	$18.36	$ 82.96	$0.67	$ 0.58	$1.40	$ 8.19	$ 6.53
Jan. 82 - Oct. 82	12.88	10.01	2.12	23.28	180.90	0.61	0.55	1.81	7.38	8.97
Jan. 83 - Oct. 83	11.54	11.03	2.57	23.68	88.16	0.61	0.57	1.68	8.69	10.96
Jan. 84 - Oct. 84	13.24	10.54	2.98	27.15	78.03	0.59	0.56	1.57	9.34	12.35
Jan. 85 - Oct. 85	22.77	12.78	2.61	28.71	64.89	0.76	0.71	2.13	9.71	13.39

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UNIVERSITY OF WATERLOO

UNIVERSITY OF WATERLOO LIBRARY

CATALOGUING WORKFLOW

The objective of the cataloguing process in the Cataloguing Department of the University of Waterloo Library is:

> *To provide machine readable MARC formatted cataloguing records for new materials added to the Library's collection.*

These records are used to produce cards for the catalogues and records for the GEAC circulation system. The Cataloguing Department's first goal, as it relates to the cataloguing process, is therefore, to acquire as efficiently and effectively as possible, MARC records in machine readable form and failing this to acquire cataloguing copy which can be used to generate MARC records locally. There is also an economic incentive since the cost of the cataloguing process is largely dependent upon the form in which the cataloguing data is acquired. The cost estimates below apply to the various cataloguing streams at the University of Waterloo. Please note that the charges paid to the source agencies are included in 1 and 2 while the cost of the hardcopy sources used in 3 are not.

1. National Library's MRDS - $ 3.20/title
2. UTLAS - $ 6.53/title
3. Copy Cataloguing - $ 9.23/title
4. Original Cataloguing - $15.82/title

The quality of cataloguing data received, regardless of the source, is of prime importance but when quality is equal (i.e. LC or NLC) which it is in many cases the format of the data has a significant impact on the efficiency of the cataloguing process.

The following information explaining the workflow within the Cataloguing Department is presented visually in the attached workflow chart. An explanation of our Rush Processing is included at the end.

1. Serials and Acquisitions Input

The Cataloguing Department receives items for cataloguing from the Serials and Acquisitions Departments. The Cataloguing Department is responsible for cataloguing monographs, monographic series, microforms and sound recordings. Cartographic materials, serials and government publications are handled by different departments. Approximately 100 to 105 items per day are received for cataloguing by the Department.

2. NL Submissions

The first step in the receiving process is the submission of numeric search keys, whenever available, to the National Library's MRDS. As a result, approximately 60% of our cataloguing data is acquired in machine readable form without any manual searching. If records are located, they are loaded into our data entry system (the loading includes an automatic edit and the automatic generation of some local fields) and printed for the verification of the headings. If records are not located, the search keys are automatically resubmitted to MRDS until either records are located or it is time (targetted maximum of 6 months) for their release to the manual processing stream.

3. Manual Stream

Items without suitable numeric search keys and those which have been released from the NL Submission process are integrated into the manual processing stream. The integration process involves a verification of the data on the control slips in preparation for the manual searching routines.

4. UTLAS Searching

The control slips for items in the manual stream are released on a first in, first out basis for on-line searching of the UTLAS data base by a searcher. If records are located, they are loaded into our data entry system (the loading includes an automatic edit and the automatic generation of some local fields), printed for the verification of the headings and matched to their appropriate control slips. If records are not located, the titles are immediately searched in a limited number of hardcopy sources which have the potential of providing additional cataloguing copy. Current statistics indicate that approximately 21 to 24% of the Department workload will be handled via UTLAS MARC.

5. Edit and Verification of MARC Records

The headings on the printed MARC records received from MRDS or UTLAS are verified in our authority files. The Arts Library's union catalogue is our authority file for names and the Series Authority File for series. Any editing of the records is performed on-line through our data entry system and the records are released weekly to systems update.

6. Manual Searching

Further manual searching is performed against a limited number of hardcopy sources which have the potential of providing additional cataloguing data on all titles for which MARC cataloguing data was not located. During this process, whether cataloguing copy is located or not, the headings are verified in our authority files. (Please note that although searching of our catalogue to avoid the purchase of duplicates is performed before the items are ordered, a few duplicates are detected during the heading verification process both for MARC and non-MARC items).

7. Coding Sheet Preparation

Coding sheets for the entry of the data into our system are prepared from any cataloguing copy located or prepared through the original cataloguing process if required. (Please note that even the format of the printed copy, i.e. card format vs. the split record Dobis format, can facilitate the preparation of these coding sheets). Current statistics indicate that approximately 1% of these items will be catalogued from additional copy with between 15 to 18% being catalogued originally.

8. Record Input and Verification

The coding sheet data is input through our data entry system which includes automatic error detection wherever possible. This same error detection process is applied during the loading of MARC records with the errors noted on the printouts. Printouts of the coding sheet records are produced and proofread. The proofread records are adjusted as required and then the records are released weekly to systems update.

9. Item Preparation

The physical items are delivered to the Book Preparation area where spine labels are attached and other preparation performed. When bar-codes are received from the Systems Department, they are fastened to the items and the items are released to the Circulation Department.

10. Systems Update

In the systems update process, the new records are added to the Library's masterfile and tapes produced for the production of catalogue cards and for the updating of the GEAC circulation data base. The cards are produced for each catalogue sorted into their appropriate sequence, delivered to the Cataloguing Department and then filed into the catalogues. The new records are added to the circulation data base and bar-code labels

produced for the items.

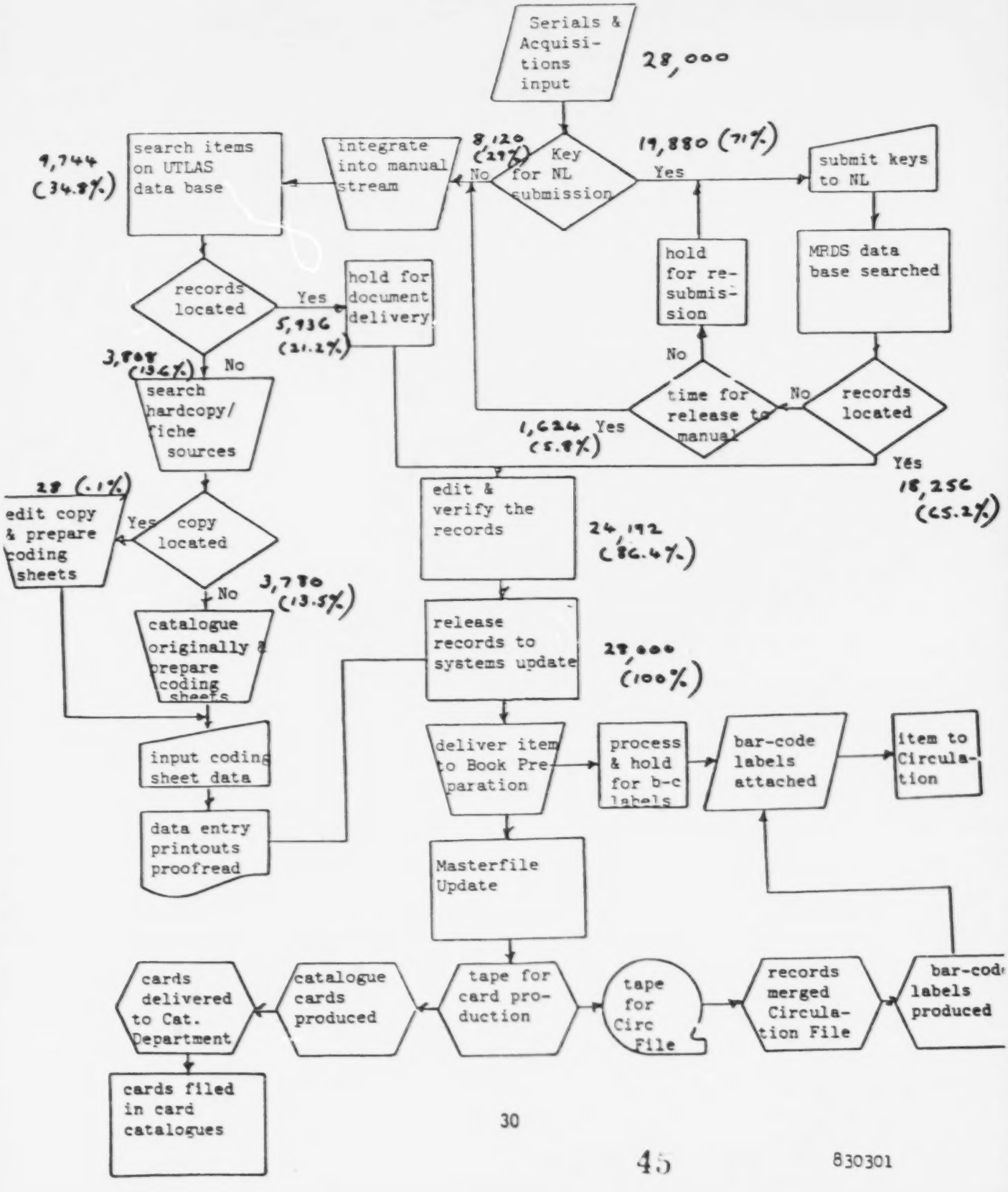
11. Rush Processing

Because the turnaround time varies for each item depending upon the availability of machine readable records and the stream in which the item is eventually processed, the Cataloguing Department introduced a rush program with guaranteed delivery within 24 hours for any item with an immediate and pressing patron demand. Since all MARC streams involve a wait for the arrival of the record, rush items are generally handled through the coding sheet routines. The 24 hour guaranteed delivery is achieved by hand to hand processing of the item right to the patron. These items leave the Department after the cataloguing is completed, but before the records are input into the system. The Department receives on the average of 2 items per day requiring rush treatment with an additional 1 item per day inprocess which has its status changed to rush.

UNIVERSITY OF WATERLOO

CATALOGUING DEPARTMENT

CATALOGUING WORKFLOW



CARD CATALOGUE MAINTENANCE

COST STUDY

I. INTRODUCTION

The Library maintains 10 separate card catalogues on campus. There are author/title and subject catalogues in the Arts, E.M.S., U.M.D. and Special Collections libraries, plus a shelflist and series authority file in the Cataloguing Department. The Arts Library catalogues and the shelflist are union catalogues containing the holdings of the entire library system, while the others are divisional catalogues or a special purpose catalogue, in the case of the series authority file.

The largest number of cards are computer produced from machine readable records created by the Cataloguing Department. These cards are machine sorted into alphabetic sequence and cards printed in 2 up streams corresponding to the various catalogues. There is a quality control check and then the cards are filed into the catalogues. Cards are also produced manually for serials titles and the series authority file. Card masters are prepared and xeroxed to produce the required number. Headings are typed on the xeroxed cards; they are alphabetized and filed into the appropriate catalogues. Approximately 300,000 cards are filed annually into the catalogues which now contains approximately 5 1/4 million cards.

Besides the new cards filed into the catalogues, approximately 85,000 cards are withdrawn annually. This occurs when titles are recatalogued and when items are withdrawn from the collection.

Card catalogue maintenance consumes a large portion of the Library's

resources and the purpose of this report is to determine those costs as of April 1983. Costs are calculated under 3 general headings 1) Personnel, 2) Supplies, 3) Equipment. Not included in these costs are general overhead expenses such as, heat, light, regular department supplies, etc.

The calculations under each general heading are followed by a summary of the total card catalogue maintenance costs.

II. PERSONNEL COSTS

Card catalogue maintenance is a labour intensive activity and, therefore, the largest expense is naturally for personnel. To determine personnel costs, the number of hours spent on card catalogue maintenance by all personnel involved in that activity was recorded from March 22 through to April 11, 1983. These hours were then compared to the total number of hours worked by each person to determine the percentage of their time allocated to catalogue maintenance activity. This percentage was applied to their month's salaries to calculate the actual dollar costs.

Supervisory salaries were allocated on the percentage of time involved in actual card catalogue maintenance functions plus the time spent supervising these functions. Only the salaries of supervisors directly involved in card maintenance have been included. No allocation has been made for Department Head or Section Head's salaries in these cost calculations.

Two catalogue maintenance activities are not reflected in the March 22 to April 11 survey. One is the pulling of cards from the catalogues because of recataloguing or the deletion of a record and the other is the expansion of the catalogue into additional cabinets. The latter is a bi-yearly process while the pulling of cards is generally a regular part of the workflow. It was only because of a priority concentration upon new title cataloguing during the survey that card pulling was not reflected. Each area of personnel costs are covered separately below:

1. GENERAL PERSONNEL COSTS

The figures and calculations from the March 22nd to April 11th survey are tabulated in Table 1: Personnel Costs.

The annual estimated personnel costs for these regular activities

are $128,200.00.

2. CARD PULLING

The estimated number of titles withdrawn annually from the catalogues is 7,720 titles which is the average over the last three years. A test survey showed that a filer can pull all the cards for 8 titles in approximately 1 hour. The hourly job rate for a grade level secretary/clerical of $7.16 was used to calculate the costs.

No. of titles pulled - 7,720 titles
No. of hours - 7,720 ÷ 8 = 965 hours
Cost - 965 x 7.16 = $6,909.40

The estimated annual cost of withdrawing titles from the catalogues is $6,909.00.

3. CATALOGUE EXPANSION

As noted under equipment below, 235 drawers or 2.4 100 drawer cabinets are filled annually. With the addition of new cabinets or when certain sections of the catalogue become too full, the entire catalogue must be shifted to redistribute the cards throughout all drawers. Major shifts are generally required bi-yearly. The cost of a recent shift in the Arts subject catalogue was calculated to be around $4,000 which includes staff and supplies (excluding new cabinet costs). It is estimated therefore that annually approximately $2,000 is spent in this aspect of catalogue maintenance.

4. SUMMARY

The total estimated annual staff costs for maintaining the card catalogues at the University of Waterloo are:

Regular maintenance	$128,200
Card pulling	6,909
Catalogue expansion	2,000
TOTAL	$137,109

There are almost 10 full time people active in card catalogue maintenance functions at the University of Waterloo. These are broken down into the following FTE. grade level positions:

5.1 FTE Grade SC5
2.6 FTE Grade SC6
1.3 FTE Grade SC8
.3 FTE Grade MPS3

TABLE #1

PERSONNEL COSTS

NAME	ANNUAL/SALARY	PERCENTAGE	COST ALLOCATION
I. Pinos	16,428	30.0	4,928.40
L. Wong	14,388	12.4	1,784.11
W. Schickler	15,840	16.2	2,566.08
M. Teschke	15,840	25.3	4,007.52
L. Lettenbauer	13,536	32.1	4,345.06
I. Stumpf	15,840	25.3	4,007.52
D. Theimer	14,388	32.7	4,704.88
J. McTaggart	19,224	95.0	18,262.80
J. Williams	12,888	31.4	4,046.83
M. Quintana	12,888	34.6	4,459.25
M. Russell	12,420	70.0	8,694.00
J. Sichewski	13,032	91.6	11,937.31
B. Kaufman	13,032	62.9	8,197.13
P. Budhwani	13,032	68.8	8,966.02
T. Vanderkolff	11,844	88.5	10,481.94
C. Randall	13,032	95.2	12,406.46
A. Unger	11,304	12.2	1,379.09
C. Sabo	11,304	23.8	2,690.35
N. Heimpel	15,840	5.8	918.72
D. Morton	400.96	100.0	400.96
A. Dlvgokecki	14,388	20.0	2,877.60
V. Permaul	18,645	7.4	1,379.73
J. Cerny	20,566	12.8	2,632.45
H. Swartz	21,081	10.1	2,129.18
		TOTAL	128,203.39

III. SUPPLIES

Only the cost of supplies directly related to card catalogue maintenance functions are included. Regular department supplies such as pens, paper, etc. are excluded. All estimates are based upon annual volumes.

SUPPLY COSTS

FORM	ANNUAL/VOL	COST	TOTAL
Authority Cards	1,500	19.68/1,000	29.52
Temporary Withdrawal Slips	10,000	.33/100	33.00
Cat. Maintenance Cards	9,000	5¢ ea.	450.00
Catalogue Correction (50 card related)	10,000	1.06/100	106.00
*Continuous Card Stock (2 up)	300,000	$5,093/350,000	4,365.42
10 up Card Stock	3,500	$60.00/1,000	210.00
TOTAL			$5,193.94
Sales tax 7%			363.57
TOTAL COST			$5,557.51

*This estimate is based upon the cost of the last order received. A new order not requiring sequential numbers on the back of the cards could reduce this cost by 50%. No order has yet been received at the potentially lower price.

The total direct supply costs relating to card catalogue maintenance are approximately $5,560 annually.

IV. EQUIPMENT

The major card catalogue equipment expenses are the cost of computer and xeroxing services used to produce the cards, typewriter maintenance charges and the cost of the catalogue cabinets. Regular office furniture costs and the costs of smaller pieces of equipment like electric erasers have not been included. Each major area of equipment cost is covered separately below followed by a summary.

1. CATALOGUE CABINETS

Currently, the Library's catalogues occupy 5,040 drawers. The main cabinet size is a 100 drawer unit although some cabinets of 30, 35 and 60 drawers are in use. Current costs of 100 drawer units are approximately $2,600 each.

The standard drawer size is 15 inches which at 100 cards/inch and an 85% usable capacity can hold 1,275 cards. The Library files 300,000 cards annually and, therefore, fills 235 drawers or 2.4 100 drawer cabinets each year.

The annual catalogue cabinet costs, excluding any maintenance on existing units is 2.4 cabinets x $2,600 = $6,240.00.

2. TYPEWRITER MAINTENANCE

The Cataloguing Department has 16 typewriters which are about 90% dedicated to card handling activities. The annual maintenance cost for the 1982/83 year is $400 and, therefore, the actual share of this expense allocated to card activities each year is $360.00.

3. XEROX CARD PRODUCTION

A xeroxing cost study of the card production process undertaken from January 1982 to February 1983 showed a cost of $.18 per 10 up sheet xeroxed. 3,500 10 up sheets are xeroxed annually for an annual xeroxing cost for card production of $630.00.

4. COMPUTER CARD PRODUCTION

The largest number of cards for the catalogues are produced by the computer. Since it is very difficult to isolate the data processing personnel costs for maintaining these programs (perhaps $10,000), the only figures used are the actual card production costs. Based upon data process

budget information, the annual computer costs for card production are $18,500.

5. SUMMARY

A summary of equipment costs for card catalogue maintenance are:

CATALOGUE CABINETS	$ 6,240.00
TYPEWRITER MAINTENANCE	360.00
XEROX CARD PRODUCTION	630.00
COMPUTER CARD PRODUCTION	18,500.00
TOTAL	$25,730.00

V. SUMMARY

The estimated annual cost of maintaining the Library's card catalogues are summarized in the tables below. Table #2 summarizes the actual cost calculations of the previous sections of this report. Table #3 is the projected costs for the 1983/84 fiscal year based upon a 5% increase in staff salaries and a 10% increase in supplies and equipment.

TABLE #2

CATALOGUE MAINTENANCE COST SUMMARY

1.	PERSONNEL COSTS	$137,109.00
2.	SUPPLY COSTS	5,560.00
3.	EQUIPMENT COSTS	25,730.00
	TOTAL ANNUAL COSTS	$168,399.00

TABLE #3

1983/84 PROJECTION

CATALOGUE MAINTENANCE COSTS

1.	PERSONNEL COSTS	$143,965.00
2.	SUPPLY COSTS	6,116.00
3.	EQUIPMENT COSTS	28,303.00
	TOTAL ANNUAL COSTS	$178,384.00

Based upon the figures in this study, the Library will spend around $180,000 to maintain the card catalogues in the 1983/84 fiscal year. This is actually a reduction in costs from a study performed a couple of years ago. At that time, the cost was in excess of $200,000 per year. This reduction in cost is the result of a change in the catalogue revision process implemented last year. The new procedures transferred the catalogue revision function from

the Librarian: Cataloguers and Assistant Cataloguers to upgraded and more highly trained clerical level positions. This has resulted in a reduction in catalogue maintenance costs from between $20,000 to $40,000.

The $180,000 figure for 1983/84 should be taken as a low estimate. A number of data base upgrading projects are planned for the year and this will impact significantly on catalogue maintenance activity. The number of cards which will have to be pulled and new cards refiled as a result of recataloguing activities should increase significantly. Maintaining the card catalogues requires a major investment of library resources which will continue to increase until the catalogues are replaced by an alternate form.

UNIVERSITY OF WATERLOO
March 1, 1984.

CATALOGUING AND CATALOGUE MAINTENANCE

COST ALLOCATION

A. INTRODUCTION

Detailed information regarding the expenditure of library resources facilitates cost-benefit evaluations of library functions and identifies areas where changes could have the most immediate effect on increasing efficiency. This report describes a method for allocating cost to the cataloguing and catalogue maintenance functions in any library organization.

The objectives of the cost allocation methodology are:

1. To allocate costs to each cataloguing and catalogue maintenance function.
2. To develop an on-going cost allocation system to facilitate the planning and evaluation of operational changes in the cataloguing process.
3. To provide a means for comparing cataloguing operations between libraries where method of performing functions vary.

The methodology is designed to be simple to apply, yet reasonably accurate in order to achieve these objectives.

Four categories of information are required for a meaningful cost allocation system:

1. Functions - generic definitions of the functions which comprise a cataloguing and catalogue maintenance operation
2. Staff Allocations - the staff resources dedicated to the performance of each function
3. Other Costs - expenditures on external and local systems and supplies which relate to the cataloguing and catalogue maintenance operation
4. Volume - the number of units processed through each function

The following sections of this report expand upon the application of these categories to the cost allocation system. This is followed by a detailed application to the cost allocation methodology to the University of Waterloo library. The application of this methodology to the other institution involved in the Peer Data Exchange program could not only provide a powerful local management tool but also a means of comparing the operation of each library.

B. FUNCTIONS

In this section, each of the functions which comprise the cataloguing and catalogue maintenance operation are described. The definitions are as generic as possible to facilitate application by different institutions while assuring complete coverage of all activities.

1. RECEIVING - All activities performed to control, maintain access and prepare items for distribution to the searching or cataloguing functions.

   This function includes shelving, the maintenance of any manual access files and the matching of printed MARC documents to the items before they are distributed for cataloguing.

2. SEARCHING & VERIFICATION - The search for cataloguing copy in either machine-readable or hardcopy form plus the verification of headings against any locally maintained manual files.

   Specifically excluded is on-line heading verification or verification against LCSH or fiche authority lists which are considered integral to the cataloguing function.

3. CATALOGUING - All activities performed by a cataloguer in the creation of a local cataloguing record excluding the verification function defined above.

   The cataloguing function is further divided into 4 processing streams.

   (i) MARC - the creation of a local record by a cataloguer using an existing machine-readable record.

   This category includes the editing of an existing machine-readable record whether performed on-line or on a printout of a MARC record.

   (ii) COPY - the creation of a local record using existing hardcopy cataloguing data.

   This category includes all records where cataloguing data is available which does not require handling by a professional librarian and where data entry is needed to create a machine-readable record.

   (iii) ORIGINAL - the creation of a local cataloguing record from the item.

   This category includes records created from the item or from poor quality cataloguing data which requires a

professional librarian cataloguer's attention and where data entry is needed to create a machine-readable record.

(iv) ABBREVIATED - the creation of a local record in less than full AACR/MARC standard format.

This category includes all types of abbreviated records created as a separate operation and not an automatic spin-off from a full AACR/MARC record. It includes CODOC, abbreviated circulation records, special listing records, etc. This category also takes precedence over the categories defined above.

4. DATA ENTRY - All terminal activity performed by data entry operators to create or maintain a machine-readable record.

This function includes all data entry operators' terminal activity excluding any searching or added item processing in which they might be involved.

5. INPUT VERIFICATION - All proofreading activity performed separately from the cataloguing process whether on records or the products produced from the records.

This function includes proofreading plus quality control measures performed on output products.

6. ITEM PREPARATION - All manual activities involved in preparing an item for the library shelves.

This function includes both the production and fastening of bar-code labels and spine labels if they are produced manually. If their production is an automatic spin-off from the record creation function, the production aspect should not be included under this function.

7. CARD PREPARATION - All activities and costs associated with the production and adjustment of catalogue cards.

This function includes staff, card stock, computer or Xerox machine costs associated with the production and adjustment of library cards.

8. RECORD MAINTENANCE - All activities performed to maintain, upgrade and enrich the machine-readable data base.

This function includes all regular recataloguing, updating, the creation and maintenance of machine-readable authority files, recon projects, etc.

9. CATALOGUE MAINTENANCE - The activities and costs associated with the creation and maintenance of the physical library catalogues.

This function includes all manual activities related to

card files plus the production costs of fiche catalogues. As defined, the only catalogue maintenance in an on-line catalogue environment would be the costs of maintaining the catalogue terminals.

10. ADDED ITEM PROCESSING - All activities performed to add a volume or copy to an existing bibliographic record.

    This function includes the activities performed to update any file when adding a copy or volume (including bound volumes of periodicals, but excluding issues). If bar-code labelling is integral to the added item processing, it is included here rather than under item preparation.

11. ADMINISTRATION - All administrative and supervisory activities related to the cataloguing and catalogue maintenance functions as defined above.

    This category includes the administrative and supervisory salary costs at and below the department head level in any department where cataloguing or catalogue maintenance activities are a significant responsibility of the department.

12. MISCELLANEOUS - This category is used to allocate a percentage of a person's salary to non-cataloguing or non-catalogue maintenance activities to ensure 100% allocation of each staff member's salary.

C. STAFF ALLOCATIONS

Staff salaries make up the largest portion of the cataloguing and catalogue maintenance costs, therefore, a comprehensive allocation of staff resources is essential. The method for allocating staff resources is designed to be easy to apply, comprehensive so that functional costs can be related to macro-cost figures and flexible so that allocations can be easily fine-tuned as functional changes occur in a library's operation.

All positions within the entire library system which perform any of the above defined functions should be identified. Each position, or groups of positions which perform essentially the same tasks, should then be allocated on a 100% basis to the various functions. 100% of the time for all positions is accounted for with the category "MISCELLANEOUS" used to record time spent on non-cataloguing or non-catalogue maintenance activities.

The actual method of allocation can vary based upon available information. Any recent studies on processing times can be used to establish ratios which can then be applied to the 100% allocation process. In the absence of this type of information, discussions with supervisors and staff can easily determine a rough percentage breakdown. The entire year to which the costing is being applied should be considered. Granted, misallocation may occur, but because of the 100% allocation process, the resources are shifted to another function and allocations can be fine-tuned to create a reasonably accurate picture.

To allow for comparison between institutions which takes into account the variations in actual salaries within a salary grade, the job rate or mid-point of the salary range is used to allocate costs. This creates a realistic costs comparison figure. To reconcile the salary cost allocation to the macro-cost figures, a line entry is included in the reconciliation figures called "Salary Reconciliation". It is this figure which reconciles the allocated costs to the actual overall salary figures.

D. OTHER COSTS

Automated systems can significantly increase staff productivity but not without a related cost. The purpose of this section is to describe the allocation of internal and external systems and supply costs relating to the cataloguing and catalogue maintenance processes. To avoid an overly complex allocation process, systems and supply costs are allocated to only 5 functions.

1. Supplies.

Supply cost should be allocated to the Administration Category except for card stock supplies which are assigned to Card Preparation.

The entire budget of departments primarily involved in cataloguing functions should be included, but where these functions are not a department's primary activity, only the cost of special forms, etc., used in the cataloguing function should be included.

2. Systems

Systems costs include both internal and external operating costs but not development or capital costs.

External systems costs should be easy to isolate for allocation, either because the service is used for a single function (i.e. MRDS) or because a detailed invoice is provided. In the absence of detailed accounting for local systems, a percentage allocation of overall systems costs and then to the four functions below may be required. Local system allocation should account for personnel, systems and product production costs.

Systems costs are allocated to the following four functions:

a) Searching & Verification

Systems cost should be allocated to the Searching & Verification function as follows:

(i) When an external service is used only to acquire cataloguing data (i.e. MRDS or UTLAS) the entire cost should be allocated to the searching function.

(ii) If a local system operation is used as an equivalent to MRDS, this portion of the local system costs including the cost of the tape subscription should be isolated and allocated to the searching function.

(iii) For UTLAS full service users only the line entry "Searching" should be allocated to the searching function.

b) Card Preparation

All systems processing and production costs associated with catalogue cards should be allocated to the card preparation function.

c) Catalogue Maintenance

All systems processing and production costs associated with the production of fiche catalogues of all types should be allocated to the catalogue maintenance function.

d) Cataloguing

All remaining systems costs both internal and external relating to the cataloguing processes and not allocated above should be allocated to the cataloguing function.

E. VOLUME

To evaluate the impact of operational changes and to allow for comparison between institutions processing different volumes, a unit cost per function is required. A volume count of items or records processed through each function, in most cases, should be available from regular departmental statistics. More detailed breakdowns of material types within functions may be possible and required by local management, but the inclusion of an overall unit cost per function will allow comparison between institutions.

UNIVERSITY OF WATERLOO

M E M O R A N D U M

March 9, 1984.

TO : M. Shepherd
D. Emery

FROM : W. Oldfield

RE : Cataloguing and Catalogue Maintenance Costs

Enclosed you will find a description of a cost allocation system plus a summary (Appendix A) and a detailed (Appendix B) application of the system to the cataloguing and catalogue maintenance operations at the University of Waterloo Library.

While the development of a cost allocation system for the Cataloguing Department has always been my intention, because of recent visits to other universities, the methodology has been generalized. As a result, the system has been applied to all cataloguing and catalogue maintenance activities at the University of Waterloo Library and, therefore, provides the information necessary for an accurate comparison of operations with other institutions.

From a local perspective, the detailed application is potentially the most useful (See Appendix B) because it provides the information necessary to isolate not only functional costs, but particular aspects of the University of Waterloo operation. Please note that the figures used are representative of the 1983/84 fiscal year. A few examples of the potential use of the information are illustrated below:

1. Serials List

The serials list is produced as a separate operation of the Materials Acquisitions Department. The total annual cost of this list is:

SALARY COSTS	22,723
OTHER COSTS	32,172
TOTAL	54,895

If the list was produced as a spin-off of the regular AACR/MARC record rather than a separate operation, the salary cost component would disappear resulting in a potential annual resource saving of $22,723.

2. Cartographic Cataloguing Data

The University of Waterloo purchases the LC MARC MAPS tapes and operates a local version of MRDS for acquiring cataloguing data. The unit cost of titles searched is $2.52. The same data is available through UTLAS with a per title search cost of $1.95.

Because of the low volume of map records (1,179 titles) only $672 could be saved annually. Of course, if the volume of searching was to increase, local unit costs would decrease while UTLAS costs would not, making a change in the current operation of questionable value.

3. Inprocess Control

The receiving function of the Cataloguing Department includes the cost of maintaining the Cataloguing Inprocess File (CIPF). It is estimated that $.30 for each monograph handled is deducted to maintain this file. When M.A.S.S. provides inprocess control, it will eliminate this cost resulting in a saving of $8,068 annually.

4. Government Publications Fiche Catalogues

The government publications fiche production costs show $42,942 spent on 182,438 records or $.24 per record. With the new version of the fiche catalogues implemented in January 1984, production costs will be $13,698 for 182,438 records or $.08 per record. The new catalogues will reduce the annual cost of these lists by $29,244.

If the $.08 per record fiche cost are applied to the 667,643 records in the card catalogue, the resulting cost of $53,411 compares very favourably to the current $158,876 spent on the maintenance of the card catalogues.

A great deal of detailed cost information is easily available through this cost allocation system. The application of this cost allocation system to the Cataloguing Department operations will, starting this year, become a regular feature of the Department's annual report.

APPENDIX A

UNIVERSITY OF WATERLOO

CATALOGUING AND CATALOGUE MAINTENANCE COSTS

FUNCTION	COMPONENTS	VOLUME	UNIT/COST	TOTAL
RECEIVING	SALARY COSTS	34,611	.73	21,959
	OTHER COSTS	---	---	---
	TOTAL	34,611	.73	21,959
SEARCHING & VERIFICATION	SALARY COSTS	29,278	2.75	80,643
	OTHER COSTS	29,278	.78	22,789
	TOTAL	29,278	3.53	103,432
CATALOGUING	SALARY COSTS - MARC	16,301	8.50	138,503
	SALARY COSTS - COPY	3,809	10.96	41,749
	SALARY COSTS - ORIGINAL	4,686	36.61	171,533
	SALARY COSTS - ABBREVIATED	19,856	3.20	63,556
	OTHER COSTS	44,652	2.47	110,319
	TOTAL	44,652	11.77	525,660
DATA ENTRY	SALARY COSTS	26,854	1.75	47,095
	OTHER COSTS	---	---	---
	TOTAL	26,854	1.75	47,095
INPUT VERIFICATION	SALARY COSTS	62,149		34,689
	OTHER COSTS	---	---	---
	TOTAL	62,149	.56	34,689

FUNCTION	COMPONENTS	VOLUME	UNIT/COST	TOTAL
ITEM PREPARATION	SALARY COSTS	57,972	.62	35,685
	OTHER COSTS	---	---	---
	TOTAL	57,972	.62	35,685
CARD PREPARATION	SALARY COSTS	25,398	.63	16,060
	OTHER COSTS	284,358	.11	29,960
	TOTAL	284,358	.16	46,020
RECORD MAINTENANCE	SALARY COSTS	37,262	3.79	141,300
	OTHER COSTS	---	---	---
	TOTAL	37,262	3.79	141,300
CATALOGUE MAINTENANCE	SALARY COSTS	667,643	.16	103,886
	OTHER COSTS	229,558	.33	75,114
	TOTAL	897,201	.20	179,000
ADDED ITEM PROCESSING	SALARY COSTS	22,964	1.32	30,379
	OTHER COSTS	---	---	---
	TOTAL	22,964	1.32	30,379

UNIVERSITY OF WATERLOO

FUNCTION	COMPONENTS		VOLUME	UNIT/COST	TOTAL
ADMINISTRATION	SALARY COSTS		---	---	187,943
	OTHER COSTS		---	---	5,855
	TOTAL		---	---	193,798
MISCELLANEOUS	SALARY COSTS		---	---	180,192
	OTHER COSTS		---	---	---
	TOTAL		---	---	180,192
RECONCILIATION	TOTAL SALARY ALLOCATION	1,114,980			
	TOTAL OTHER COSTS	244,037			
	TOTAL PROCESSING COSTS	1,359,017			
	SALARY RECONCILIATION				
	TOTAL SALARY ALLOCATION	1,114,980			
	MISCELLANEOUS ALLOCATION	180,192			
	TOTAL	1,295,172			
	SALARY RECONCILIATION	81,533			
	ACTUAL TOTAL SALARY	1,376,705			

APPENDIX B

UNIVERSITY OF WATERLOO

CATALOGUING AND CATALOGUE MAINTENANCE COSTS

FUNCTION	COMPONENTS	VOLUME	UNIT/COST	TOTAL
RECEIVING	SALARY COSTS - MONO	26,892	.73	19,763
	SALARY COSTS - GOV. PUB.	7,719	.28	2,196
	OTHER COSTS	---	---	---
	TOTAL	34,611	.63	21,959
SEARCHING & VERIFICATION	SALARY COSTS - MONO	25,149	2.26	56,921
	SALARY COSTS - SPEC. COLL.	2,241	2.42	5,431
	SALARY COSTS - SERIALS	709	18.14	12,858
	SALARY COSTS - MAPS	1,179	4.61	5,433
	OTHER COSTS - UTLAS	9,213	1.95	18,000
	OTHER COSTS - MRDS	21,663	.08	1,811
	MARC MAPS/TAPES/FICHE/SYS	1,179	2.52	2,978
	TOTAL	29,278	3.53	103,432
CATALOGUING	MARC - SALARY COSTS - MONO	15,936	8.49	135,243
	SALARY COSTS - MAPS	365	8.93	3,260
	COPY - SALARY COSTS - MONO	1,743	11.47	19,986
	SALARY COSTS - SPEC. COLL.	1,793	5.24	9,388
	SALARY COSTS - SERIALS	273	45.33	12,375
	ORIGINAL - SALARY COSTS - MONO	2,988	33.22	99,257
	SALARY COSTS - SPEC. COLL.	448	22.92	10,268
	SALARY COSTS - SERIALS	436	82.95	36,166
	SALARY COSTS - MAPS	814	31.75	25,842

UNIVERSITY OF WATERLOO

FUNCTION	COMPONENTS	VOLUME	UNIT/COST	TOTAL
CATALOGUING	ABBREVIATED - SALARY COSTS - GOV. PUB.	16,683	2.43	40,471
	SALARY COSTS - SERIALS LIST	2,842	8.00	22,723
	SALARY COSTS - MAPS	331	1.09	362
	TOTAL - OTHER COSTS - LOCAL SYST.			110,319
	TOTAL	44,652	11.77	525.660
DATA ENTRY	SALARY COSTS - NEW SERIALS	709	2.35	1,663
	SALARY COSTS - ALL OTHERS	26,145	1.74	45,432
	OTHER COSTS	---	---	---
	TOTAL	26,854	1.75	47,095
INPUT VERIFICATION	SALARY COSTS - MONO	4,731	1.90	8,996
	SALARY COSTS - GOV. PUB.	16,683	.43	7,096
	SALARY COSTS - CARDS	35,856	.25	8,970
	SALARY COSTS - SERIALS	1,207	1.20	1,452
	SALARY COSTS - SPEC. COLL.	2,490	1.88	4,690
	SALARY COSTS - MAPS	1,179	2.96	3,485
	OTHER COSTS	---	---	---
	TOTAL	62,149	.56	34,689

UNIVERSITY OF WATERLOO

FUNCTION	COMPONENTS	VOLUME	UNIT/COST	TOTAL
ITEM PREPARATION	SALARY COSTS - MONO	41,334	.57	23,468
	SALARY COSTS - GOV. PUB.	16,638	.55	9,127
	SALARY COSTS - MAPS	3,730	.83	3,090
	OTHER COSTS	---	---	---
	TOTAL	57,972	.62	35,685
CARD PREPARATION	SALARY COSTS	25,398	.63	16,060
	OTHER COSTS - CARDSTOCK			4,845
	OTHER COSTS - SYSTEMS			25,115
	TOTAL OTHER COSTS	284,358	.11	29,960
	TOTAL	284,358	.16	46,020
RECORD MAINTENANCE	SALARY COSTS - MONO	18,983	5.29	100,397
	SALARY COSTS - GOV. PUB.	3,321	2.14	7,096
	SALARY COSTS - CIRC. FILE	13,446	1.22	16,425
	SALARY COSTS - SERIALS	747	21.15	15,800
	SALARY COSTS - SPEC. COLL.	747	1.61	1,201
	SALARY COSTS - MAPS	18	21.17	381
	OTHER COSTS	---	---	---
	TOTAL	37,262	3.79	141,300

UNIVERSITY OF WATERLOO

FUNCTION	COMPONENTS	VOLUME	UNIT/COST	TOTAL
CATALOGUE MAINTENANCE	SALARY COSTS - CARD CAT.			99,060
	SALARY COSTS - SPEC. COLL.			4,826
	TOTAL	667,643	.16	103,886
	OTHER COSTS - G.P. - SYSTEMS			32,942
	OTHER COSTS - G.P. - FICHE			10,000
	TOTAL	182,438	.24	42,942
	OTHER COSTS - S.L. - SYSTEMS			4,172
	OTHER COSTS - S.L. - FICHE			28,000
	TOTAL	47,120	.68	32,172
	TOTAL	897,201	.20	179,000
ADDED ITEM PROCESSING	SALARY COSTS - MONO	16,964	1.34	22,716
	SALARY COSTS - GOV. PUB.	6,000	1.26	7,572
	SALARY COSTS - MAPS	N/A	N/A	91
	OTHER COSTS	---	---	---
	TOTAL	22,964		
ADMINISTRATION	SALARY COSTS - MONO			167,590
	SALARY COSTS - SERIALS			15,010
	SALARY COSTS - SPEC. COLL.			1,421
	SALARY COSTS - MAPS			3,922
	OTHER COSTS - SUPPLIES			5,855
	TOTAL			193,798

UNIVERSITY OF WATERLOO

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FUNCTION	COMPONENTS		VOLUME	UNIT/COST	TOTAL
MISCELLANEOUS	SALARY COST - CATALOGUING DEPT.				32,941
	SALARY COST - SERIALS DEPT.				57,122
	SALARY COST - SPEC. COLL. DEPT.				27,941
	SALARY COST - MAP & DESIGN LIB.				62,188
	OTHER COSTS				---
	TOTAL				180,192
RECONCILIATION	TOTAL SALARY ALLOCATION	1,114,980			
	TOTAL OTHER COSTS	244,037			
	TOTAL PROCESSING COSTS	1,359,017			
	SALARY RECONCILIATION				
	TOTAL SALARY ALLOCATION	1,114,980			
	MISCELLANEOUS ALLOCATION	180,192			
	TOTAL	1,295,172			
	SALARY RECONCILIATION	81,533			
	ACTUAL TOTAL SALARY	1,376,705			

UNIVERSITY OF WATERLOO

CATALOGUING DEPT.
ANNUAL REPORT 1984/85

FUNCTIONAL COST ALLOCATION

The functional cost allocation spreadsheet (See Appendix D) provides cost figures for each process within the Cataloguing Department. Because there is data from the previous year, a percentage unit cost increase column has been added to identify areas of significant change between the two years. A few major cost figures are calculated from the spreadsheet and noted below. This is followed by discussions of some areas where significant changes have occurred between the two years.

MAJOR COST AREAS

Cataloguing cost figures include all processes (searching & verification, cataloguing (including systems costs), data entry, input verification) required to create a catalogue record. Total title and volume add costs are amortized over the entire Cataloguing Department budget.

	1983/84	1984/85
MARC	$10.66	$11.62
Copy	$19.99	$21.93
Original	$36.77	$30.36
Total AACR II	$15.41	$14.99
Abbreviated	$ 7.62	$ 7.69
Total	$12.22	$13.33
Total per title added	$25.67	$28.18
Total per volume added	$18.21	$17.99
Card catalogue costs	$137,636	$153,236

FUNCTIONAL COST CHANGES

Receiving - reduced CIPF maintenance because of M.A.S.S. - no 3 x 5 slips for firm orders with inprocess control provided through M.A.S.S.

Searching & Verification - minor increase the results of increased use of Receiving Clerks to search UTLAS

Original Cataloguing - reorganization increased the administrative role of the librarians yet the same staff managed to catalogue more titles

Data Entry - staff shortages due to sick leave increased costs last year

Item Preparation - increased costs reflect tighter control over bar-code labels plus an increased service cost since extra resources are allocated when bar-code labels arrive in order to move the items to the shelves as quickly as possible

Cardstock - results of the purchase of poor quality cardstock

Record Maintenance - G.P. - the results of a serials project which requires a great deal of searching just to identify the title changes that require correction

Total G.P. Fiche costs - the result of union list fiche production

Administration - Cataloguing Section - increase the results of the reorganization of the section

Administration - Record Maintenance - results of increased task group activity for Section Head

Administration - Catalogue Products - a significant allocation of supervisory resources in the section to the cataloguing process

APPENDIX D.
CATALOGUING DEPARTMENT

FUNCTIONAL COST ALLOCATION 1983/84 & 1984/85

FUNCTION	COMPONENTS	1983/1984 VOLUME	1983/1984 UNIT/COST	1983/1984 TOTAL	1984/1985 VOLUME	1984/1985 UNIT/COST	1984/1985 TOTAL	PERCENTAGE UNIT/COST INCREASE
RECEIVING	SALARIES	34242	$0.85	$29,283	37372	$0.71	$26,434	-17.1%
SEARCHING & VERIFICATION	NL - MRDS	21626	$0.08	$1,644	24128	$0.09	$2,135	16.4%
	UTLAS	10038	$1.96	$19,698	13628	$2.18	$29,692	11.8%
	SALARIES	27294	$1.56	$42,621	38871	$1.68	$49,369	2.4%
	TOTAL	27294	$2.34	$63,963	38871	$2.63	$81,196	12.2%
CATALOGUING	SALARIES - MARC	22724	$5.70	$129,593	25579	$6.12	$156,539	7.3%
	SALARIES - COPY	1542	$11.51	$17,752	1698	$13.27	$22,534	15.3%
	SALARIES - ORIGINAL	3828	$27.09	$84,638	3598	$21.78	$78,069	-22.2%
	SALARIES - ABBREVIATED	14808	$2.87	$42,471	9534	$3.29	$31,324	14.6%
	SYSTEM/COSTS	42182	$2.62	$110,319	40405	$2.87	$115,835	9.4%
	TOTAL	42182	$9.13	$384,575	40405	$10.01	$404,301	9.5%
DATA ENTRY	SALARIES	25112	$1.65	$41,343	24181	$1.17	$28,235	-29.1%
INPUT VERIFICATION	SALARIES - MONO	4578	$1.87	$8,536	5296	$1.99	$10,553	6.7%
	SALARIES - G.P.	14927	$0.48	$7,096	10258	$0.36	$3,726	-23.6%
	SALARIES - CARDS	36924	$0.24	$8,978	48814	$0.26	$10,604	6.9%
	TOTAL	56421	$0.44	$24,602	56368	$0.44	$24,882	1.2%
ITEM PREPARATION	SALARIES	50326	$0.63	$36,577	56679	$0.79	$44,873	26.2%
CARD PREPARATION	CARDSTOCK			$4,845			$3,920	-19.1%
	SYSTEM/COSTS			$25,115			$26,370	5.0%
	TOTAL OTHER COSTS	259388	$0.12	$29,960	260995	$0.12	$30,290	0.5%
	SALARIES	25621	$0.44	$11,294	27326	$0.51	$13,895	15.4%
	TOTAL	285009	$0.14	$41,254	288321	$0.15	$44,185	5.9%
RECORD MAINTENANCE	SALARIES - MONO	28394	$5.87	$103,412	28598	$4.74	$97,539	-6.6%
	SALARIES - G.P.	3321	$2.14	$7,096	3694	$6.05	$22,356	183.2%
	SALARIES - CIRC.	14727	$1.20	$17,715	17519	$1.26	$20,089	4.8%
	TOTAL	38442	$3.34	$128,223	41803	$3.48	$141,983	1.8%

RUTGERS UNIVERSITY

THE STATE UNIVERSITY OF NEW JERSEY

RUTGERS

Interdepartmental Communication

DRAFT

October 21, 1985

TO: Technical Services Council
Librarian's Cabinet

FROM: Shirley W. Bolles

RE: Technical Services Review

After much discussion and a considerable lapse in time since the idea of a Technical Services Review was first developed, I have settled on a plan for the review.

We will hire an outside technical services librarian who will spend up to six months and substantial on-campus time to document all our existing routines in acquisitions, cataloging, processing, binding and book accounting. To the extent possible the documentation will deal with both central and unit operations.

The outside "project leader" will work with committees or task forces which will be formed in the preceding functional areas and will review existing work flow and develop alternatives where required.

When the documentation and planning is complete we will ask one or two nationally recognized technical services "experts" to review our plans and provide the last analysis. After that we will begin to implement suggested changes.

The goal of the review and reorganization will be to get all orders out within one week and all received books with catalog copy available through cataloging and processing within a maximum of three weeks. An additional goal is to reduce the current back log of books in which nothing will remain for more than six months. This should be done within two years from the completion of the study.

In addition to revising work flow and organization, an estimate of the staff and space required to accomplish the work required to make these performance goals a reality will be developed.

I would appreciate your input in order to finalize these goals and plans as soon as possible.

SWB:slr

RUTGERS UNIVERSITY

TASKLIST

1. Review the Workflow of all Technical Services Processes
   - 1.1 Monographs
   - 1.2 Serials
   - 1.3 Government Documents
   - 1.4 Gift Processing
   - 1.5 Fund Accounting

2. Review staffing, workloads, and productivity of Technical Services areas

3. Review the Organization of Technical Services Departments

4. Evaluate Unit Library workflow, staffing and organization

5. Evaluate physical facilities and layout of the Technical Services areas (Alexander and Unit Libraries)

6. Investigate, analyze, and evaluate the use of Automation in Technical Services
   - 6.1 RLIN
   - 6.2 GEAC
   - 6.3 CAPTAIN

7. Develop alternative workflows and staff organizations with benefit and implication statements

8. Evaluate the implications of centralized vs decentralized processing
   - 8.1 Staffing
   - 8.2 Facilities
   - 8.3 Costs

9. Develop future policies and procedures list

10. Develop list of recommendations

Law Library Review - 1982

Technical Services Study

1. Introduction

As part of the internal review of the operations of the Law Library, a study will be conducted of the procedures followed in both the Main Library and Law Library in the handling of legal materials from the point of selection to the stage where an item is ready to be shelved. The objective of the study is to describe as thoroughly as possible (given the constraints of personnel and time available) the workflow, time and cost of processing legal materials.

2. Organisation of the Study

Because of the limited time available to conduct the study, it will be necessary to study various parts of the technical services workflow in different ways. At least five separate sub-studies will be conducted:

a. Interviews with staff concerned with the various functional areas to be studied in order to document the procedures which are followed and to isolate how, if at all, legal materials are handled differently from other library materials. This method will also involve collecting documentation on policies and procedures.

b. A sampling study of legal materials which have been received in the library to make an estimate of the time and cost associated with various stages of the technical services workflow. The study will also provide a check on the information gathered in the interviews. Because the short time available will not permit any book to be tracked from receipt to shelving, books already in the system will be tracked as well, in order to aggregate data gathered at various stages into a meaningful picture.

c. A study of the time needed for the processes involved in the select - order functions, and some analysis of vendor statistics;

d. A study of the subscription cost of serials in the Law Library. Where possible, comparisons will be made within the study of procedures, workflows, costs, and so on related to other parts of the library system; and

e. Current serials, supplements and paper parts.

3. Detailed Descriptions of the Studies

a. Interviews, policies, procedures

The initial collection of documentation has taken place. Interviews with library personnel are tentatively scheduled to take place in the following time period:

BEST COPY AVAILABLE

Week of:	
Sept. 20	Collection Development
Sept. 27	Bibliographic Control
Oct. 04	Order
Oct. 11	Cataloguing
Oct. 18	Production

b. Workflow study

This study will be conducted by inserting a data-gathering sheet (Attachment 1) into all materials destined for the Law Library as they arrive in Technical Services as new monographs, gifts, or hardbound serial volumes. Library staff who handle these items will be asked to note the date, their classification, the task and the time taken to complete the task. This will provide data on workflow, time and cost. Data from materials destined for the Health Sciences Library and the Main Library will be gathered on a smaller scale to provide a control group.

Because the study will not last long enough to track a sufficient number of newly-received items through the system, as many Law Library items presently in the technical services workflow as possible will be part of the data-gathering effort. Forms will be inserted into these items during the week of Sept. 20. Forms will also be inserted into a sample group of Health Sciences and Main Library items as well.

The period of data collection will begin Monday, September 27 and end Friday, November 26, 1982.

c. Select - Order study

Personnel involved in the process of selecting material to be ordered, searching and ordering will be asked to date the Library Request Form at the completion of each stage of the process. At the point where the blue slips are returned to the selectors, the total time will be recorded.

This study will also be conducted between Sept. 27 and November 26, 1982.

d. Law serials costs

Work has begun recording the 1982-83 subscription cost of serial materials destined for the Law Library.

e. Law current serial, supplement and paper parts

The time needed to check in and deliver current supplements and paper parts will be studied. The methodology has not yet been determined.

CATALOGUE MAINTENANCE	G.P. FICHE			$10,000			$7,216	-27.8%
	G.P. SYSTEM/COSTS			$32,942			$6,500	-80.3%
	TOTAL G.P. FICHE/COSTS	183948	$0.23	$42,942	193227	$0.07	$13,716	-69.6%
	SALARIES - CARD CAT.	673676	$0.13	$87,412	724695	$0.14	$98,447	4.7%
	TOTAL	857624	$0.15	$130,354	917922	$0.12	$112,163	-19.6%
ADDED ITEM PROCESSING	SALARIES - MONO	17239	$1.32	$22,716	22893	$1.52	$34,803	15.7%
ADMINISTRATION	CATALOGUING SECTION			$69,719			$82,880	18.8%
	RECORD MAINT. SECTION			$41,986			$38,820	-7.5%
	CAT PRODUCTS SECTION			$16,888			$16,184	-4.2%
	DEPARTMENT			$38,149			$40,860	7.1%
	SUPPLIES			$10,787			$16,776	55.5%
	TOTAL			$177,529			$195,500	10.1%
MISCELLANEOUS	SALARIES			$53,875			$55,989	3.9%

FUNCTIONAL COST ALLOCATION SUMMARY

	1983/84	1984/85	PERCENTAGE INCREASE
TOTAL SALARY ALLOCATION	$864,989	$930,194	7.5%
TOTAL OTHER COSTS	$215,839	$208,444	-3.4%
TOTAL PROCESSING COSTS	$1,080,828	$1,138,638	5.3%

SALARY RECONCILIATION

	1983/84	1984/85	PERCENTAGE INCREASE
TOTAL SALARY ALLOCATION	$864,989	$930,194	7.5%
MISCELLANEOUS ALLOCATION	$53,875	$55,988	3.9%
CASH CREDITS	$38,831	$54,052	39.2%
SUBTOTAL	$957,695	$1,040,233	8.6%
TOTAL SALARY BUDGET	$1,015,095	$1,053,798	3.8%
TOTAL PART TIME BUDGET	$16,954	$44,460	162.2%
TOTAL	$1,032,049	$1,098,258	6.4%
ALLOCATED	$957,695	$1,040,233	8.6%
SALARY RECONCILIATION	$74,354	$58,025	-22.0%

LAW LIBRARY STUDY - 1982

* * * * * * * * * * * * * *

INSTRUCTIONS:

1. Each time you handle the item to which this sheet is attached, legibly print the date, your department's name, your initials and your position classification (e.g., LA I, LA IV, LIB II)
2. Briefly describe what you are doing to the item (e.g., match book with invoice, PMARC, catalogue, label)
3. Record the time taken to complete the task in minutes. Use decimal notation to express fractions of a minute. (e.g., use 5.5 minutes, not 5 minutes 30 seconds)
4. At the moment that the item is sent out to be shelved, remove this form and send it as soon as possible to the Library Administration Office. If there is a Library Request Form in the book, attach it to this form and send both.

* * * * * * * * * * * * * *

ITEM DATA:

Sheet no.	_____	IPF no.	_____	Location	_____
Rush	_____	Gift	_____	Added copy	_____
SuperRush	_____	Photo	_____	Added vol.	_____
Marc	_____	Non-Marc	_____	Reclass.	_____

* * * * * * * * * * * * * *

DATE	DEPT.	INITIALS	CLASS.	TASK	TIME
				89	

Reports

JEAN AND ALEXANDER HEARD LIBRARY
VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE
GENERAL TECHNICAL SERVICES PROCESSING COSTS

Doug Phelps
January 1986

I. COST ANALYSIS

A. Direct Costs

1. Labor

We have divided processing activity of the General Technical Services Division into 22 processing "modules." These are:

1. Verification
2. Data Entry
3. Ordering
4. Receiving (non-serial)
5. Serial Receiving
6. Periodical Receiving
7. Invoice Payment
8. Copy Cataloging (monograph)
9. Original Cataloging (mono.)
10. Serial Cataloging
11. Catalog Authority Work
12. Monograph Binding
13. Serial Binding
14. Periodical Binding
15. Marking
16. Monograph Maintenance
17. ReCon/Reclass
18. Card Sorting
19. Public Catalog Card Filing
20. Public Catalog Card Revising
21. Shelf List Filing
22. Shelf List Revising

a. Hours

We assign every non-administrative position in the division to one of these modules. The bi-weekly time sheets required of non-exempt classified staff and of student employees are the basis for determining paid hours for these two staff categories in each module. For the exempt staff, we consider a 40 hour week to be the "norm." Therefore, we assume an 8-hour day and multiply the number of working days in each month by eight. At the end of the month, each person reports time spent in modules other than the assigned primary module. We record these and subtract the time from the primary module hours calculated for that month.

b. Wages

For every month, we have a list of staff reporting time spent in each production module. We organize the staff into three categories: (1) exempt, (2) classified non-exempt, and (3) students. We note the wages plus benefits budgeted for each person listed in the module. Next to the budgeted amount, we cite the number of hours for which the position was budgeted. For each staff

category within the module, we divide the total budgeted cost by the total budgeted hours. The result is a mean hourly cost for each staff category. The following figures illustrate this:

	Budgeted Wages	Budgeted Benefits	Budgeted Total	Budgeted Hours	Hourly Cost
Exempt 1	23,000	4,800	27,800	2,080	
Exempt 2	18,000	3,200	21,200	2,080	
Exempt 3	17,000	4,000	21,000	2,080	
			70,000	**6,240**	**11.22**
Classified 1	12,000	2,700	14,700	1,950	
Classified 2	9,500	2,450	11,950	2,080	
Classified 3	10,300	2,500	12,800	1,664	
			39,450	**5,694**	**6.93**
Student 1	1,742	0	1,742	520	
Student 2	2,730	0	2,730	780	
			4,472	**1,300**	**3.44**

We then weight these hourly costs to reflect staff mix. From the monthly module data, we know how many hours are reported for each module. We identify the per cent of hours for each of the three staff categories and multiply this per cent times the mean hourly cost for that category. For example, assume the previous table is representative of Monograph Binding (obviously a fictitious assignment since exempt staff do not work in this module). Assume 20% of the hours reported for Monograph Binding were exempt staff hours; 70% were classified staff hours; and 10% were student hours.

	Mean Hourly Cost	Per Cent of Total Hours	Weighted Hourly Cost
Exempt	11.22	20%	2.24
Classified	6.93	70%	4.85
Student	3.44	10%	0.34
			7.43

The weighted labor cost per hour for Monograph Binding is $7.43.

c. Cost per volume

The weighted labor cost per hour times the number of hours paid in each module yields the total weighted labor cost for that module. Note that the measure used is hours paid rather than hours worked. We record hours worked for secondary module activity and back this out of primary module hours. Primary module hours, however, include not only hours worked but also sick leave, holiday, vacation, meetings, bereavement leave, etc. Since we are interested in cost rather than simply production rates, we use total hours paid as the primary unit of measure. To determine the labor cost to produce one unit, we divide the total weighted labor cost by the number of units produced. However, this figure is of little value in determining total processing costs since each production module has a different unit of measure: the unit for verification

is the number of first-time searches made; the unit for copy cataloging is the number of titles cataloged; the unit for periodical binding is the number of volumes bound. We need a common denominator--a common unit of measure. The total number of volumes received provides the common unit. We determine the number of volumes received from two sources: (1) the number of gift volumes processed by both the serial receiving and non-serial receiving units, and (2) the number of volumes paid for as recorded by our automated Acquisitions-Accounting System. The equation used to determine cost per volume was first set up by Malcolm Getz in our study of processing costs in three academic libraries.* In its most generic form, the statement is as follows:

$$\frac{\text{Units Produced}}{\text{Volumes Received}} \times \frac{\text{Cost}}{\text{Units Produced}} = \frac{\text{Cost}}{\text{Volumes Received}}$$

We must note one major exception to this generic format. In setting up the production modules, we separate Monograph Cataloging into Copy Cataloging and Original Cataloging in order to reflect the different work mix between these two cataloging tracks within the various libraries. Since the two modules together reflect total titles cataloged against the measure of volumes received, we determined that it was not appropriate to measure each component production unit against the whole. Therefore, we obtain from pre-order verification statistics the number of searches producing Library of Congress cataloging copy. This turnes out to be 65% of the total number of searches recorded. Using this standard, we project that 65% of the volumes received are subject to Copy Cataloging. For Copy Cataloging cost analysis, the number of "Volumes Received" in the formula is replaced by 65% of this number. Similarly, when used for Original Cataloging costs it is replaced by 35% of the number of volumes received. This provides a means of tracking Monograph Cataloging costs either as an entity or as two separate cost factors. (This second option becomes critical when determining processing costs among the various libraries served by General Technical Services.)

2. Supplies & Equipment

We determine non-labor costs by reviewing the year-end budget statements. When a budget encompasses more than one processing module, we ration the expenditures based on the number of staff hours, the amount of production, and/or the type of activity. (For example, Original Cataloging would not incur OCLC first time use charges, but Copy Cataloging would. On the other hand, costs between Ordering and Receiving are best rationed on the basis of staff hours reported in each module.) OCLC costs present the exception to using the year-end budget statements. For this category, the charges billed by OCLC and SOLINET were used since budget figures record deposits made into our SOLINET account rather than expenditures shown on the budget documents. The same equation for determining cost per volume is used with Supplies and Equipment as is used for Labor Costs.

*Malcolm Getz and Doug Phelps, "Labor Costs in the Technical Operations of Three Research Libraries," The Journal of Academic Librarianship, Vol. 10, No. 4 (September 1984), pp. 209-219.

The categories selected for reporting Supplies & Equipment charges are as follows:

1. Supplies
2. Equipment Maintenance
3. OCLC Transactions
4. OCLC Fixed Costs

The first two are self-explanatory. Under OCLC Transactions, we include all OCLC/SOLINET charges which are not hardware-related. Examples are first time use, searching, card production and postage, serial volume check-in and claiming. OCLC Fixed Costs include terminal maintenance, system service fee, and telecommunications charges.

B. Indirect Costs

1. System-wide Administration

Every library receives a System-wide Administration cost assessment based on the number of budgeted non-student hours. The administration divides the bottom line of administrative costs by the number of budgeted hours outside the administration and then assesses each division its share, based on the total non-student hours budgeted for that division. When we receive the System-wide Administration assessment for General Technical Services, we divide the assessment by the total number of non-student hours anticipated in each processing module plus the hours budgeted for GTS Administration and GTS department management (i.e., the department heads). We then multiply this cost per hour by the hours budgeted for each of these areas to determine the System-wide Administration assessment for each module as well as for the GTS Administration and Management areas.

2. Space Maintenance

The library administration, working from the total library assessment levied by Plant Operations, assigns the square footage maintenance cost to each division in the library system. In General Technical Services, we have assigned appropriate footage to each of the processing modules and to GTS Administration and Department Management. We multiply the number of square feet assigned to each component times the cost per square foot to determine each module's portion of this indirect cost assessment.

3. Automation Assessment

The library administration assesses the on-going costs of the library's integrated online system on the basis of the number of terminals assigned to each library division. We identify the processing modules within General Technical Services which use the system and determine what share of a terminal fee should be charged to each module. We multiply the terminal fee by the share assigned For example, Verification has two terminals dedicated to verification, therefore Verification has 2 shares. Serial Receiving has one terminal which is used also by Periodical Receiving, therefore each of these modules has 0.5 shares.

4. GTS Overhead

GTS Overhead costs include the direct costs associated with the Director of General Technical Services, the GTS office, the department heads, and the travel budget for the division. It also includes the indirect costs of System-wide Assessment and Space Maintenance assessed to the GTS Administration and to the Department Heads. We assess the GTS Administrative costs to the processing modules and to Department Heads in the division on the basis of total hours budgeted, including student hours.

GTS Department Head costs, therefore, include the salary/benefits budgeted for the Department Head, plus the assessed indirect costs of System-wide Administration, Space Maintenance, and GTS Administration. We distribute the costs of each Department Head among the processing modules under the direction of the respective Department Head on the basis of the number of hours budgeted, including student hours.

For each module, we combine the GTS Administration assessment and the Department Head assessment into one figure--GTS Overhead.

II. COST ASSESSMENT

A. Volume Base

1. Basic Budget

From the Acquisitions-Accounting System, we obtain at the end of each fiscal year a record of the number of volumes paid for and the total amount paid against each bookfund in the system for that year. From this information, we know the average purchase price per volume for each library. In the early spring of each calendar year, as the library is preparing budgets for the coming fiscal year, we solicit from selected book vendors anticipated inflation increases in purchase prices of monographs, periodicals, and non-periodical serials. Since we have firm data for the previous fiscal year, and projections for the current fiscal year, the sequence of applying these inflation projections and deriving an anticipated purchase price figure for the coming year is as follows:

	1984/85			1985/86		1986/87	
	KNOWN VOL COUNT	KNOWN COST	$/VOL	PROJECTED INFLATION	PROJECTED $/VOL	PROJECTED INFLATION	PROJECTED $/VOL
Mono	17,264	439,067	25.43	5%	26.70	5%	28.04
Ser	4,422	125,179	28.31	6%	30.01	6%	31.81
Per	3,272	387,339	118.38	7.5%	127.26	7.5%	136.80

We perform this calculation for every library in the system.

From each library's budget, we obtain the amount of funds allocated for each of the three categories--monographs, periodicals, and non-periodical serials. For each category, we divide the allocation by the projected purchase price per

volume to determine how many volumes we should anticipate. To reach an aggregate figure, we add the number of projected volumes in each category and divide this into the total allocation. The result is the aggregate purchase price per volume for all library materials. (Note: We do not yet have the sophistication to take into consideration non-print media as a separate entity.) The following table illustrates this maneuver.

	ALLOCATION	PROJECTED PURCHASE PRICE PER VOL.	PROJECTED NUMBER OF VOLS.	AGGREGATE PURCHASE PRICE PER VOLUME
Monographs	496,150	$28.04	17,694	
Serials	275,200	31.81	8,651	
Periodicals	442,000	136.80	3,231	
	1,213,350		**29,576**	**$41.02**

In this example, we anticipate an "INPUT COUNT" of 29,576 volumes via basic budget expenditures from this particular library.

2. Restricted Budgets

We have no way of knowing how much money will be made available to the libraries via restricted budgets during the coming fiscal year. Some restricted funds will provide for processing costs at the time they are entered onto library budgets. Others, particularly endowment funds and small gift funds, will not include processing costs. Since we can obtain from the Acquisitions-Accounting System the volume count for each fund, we use the previous year's data to list all restricted funds showing purchases in the previous year. We delete those which carried their own processing cost assessments. We use the remaining funds, with the number of volumes purchased on each, as the base for anticipating restricted fund activity in the coming year.

3. Gift Volumes

Each library has an annual quota of gift volumes which General Technical Services has contracted to process on a monthly quota basis. In preparing the new budget, the Director of GTS contacts the appropriate administrator in each library served by GTS processing to determine whether s/he wants to change this annual quota. The new quota comprises the third element in determining the anticipated workload.

For each library, the total number of volumes anticipated via basic budget expenditures, the number of volumes anticipated via restricted budget expenditures, plus the number of volumes anticipated via gift become the "Total Volume Base" for the new fiscal year.

B. Processing Cost Assessment

1. "INPUT" Costs

INPUT Costs are those most closely associated with acquisitions. INPUT Costs are mandatory. Obviously, the titles must be received if they are to be made available via GTS to the libraries. INPUT Costs are those costs associated with bringing the material into the cataloging track. Modules identified as INPUT modules are

1. Verification
2. Data Entry
3. Ordering
4. Receiving
5. Invoice Payment
6. Monograph Binding

From the cost analysis, we identify the direct and indirect costs associated with each of these processing modules. Verification costs are determined on the basis of non-duplicate first-time searches. However, approximately 20% of the first-time searches conducted yield non-intentional duplicates. The proportion of non-intentional duplication vis-a-vis total items submitted to Verification differs for each library. In order to compensate for the additional work incurred, we weight the Verification costs by adding a surcharge based on the proportion of non-intentional duplication. For example, if a library's duplication rate is 20% of the total number of items it submits for verifikation, that library pays a 20% surcharge. Instead of the non-weighted cost of $3.33 per volume, that particular library would pay $3.33 plus ($3.33 x 20%), or $4.00. (We round all cost figures up to the nearest penny.)

For 1985/86, we have a weighting factor of 20% as the summation of non-intentional duplication from all libraries. The INPUT Costs projected for 1985/86 are $9.15 per volume received. This figure will be more or less for each individual library, depending on the non-intentional duplication weighting factor for that particular library.

2. SERIAL Costs

Serial Costs do not fluctuate significantly with increases or decreases in the bookfund allocations. As a rule, librarians deduct funds for serial purchases from the total allocation leaving the remainder for monograph purchases. To be certain that serial staffing coordinates as closely as possible with the anticipated workflow, we also take serial costs "off the top" of the overall processing costs. The modules which comprise Serial Costs are:

1. Serial Receiving
2. Periodical Receiving
3. Serial Cataloging
4. Serial Binding
5. Periodical Binding

Serial Maintenance has become a support unit to Serial Cataloging. Hours reported in Serial Maintenance are incorporated into the Serial Cataloging costs. Serial Costs projected for 1985/86 are $7.31 per volume received.

3. "OUTPUT" Costs

The "output" of General Technical Services consists of those modules most closely identified with monograph cataloging. They are

1. Copy Cataloging
2. Original Cataloging
3. Monograph Maintenance
4. Reclass/Retro. Conversion
5. Marking
6. Card Sorting

For all practical purposes, Reclass/ReCon has been absorbed into regular Monograph Maintenance. This is the last year for it to be identified as a separate module. Catalog Authority does not have measurable production statistics prior to 1985. Therefore we have merged it into Original Cataloging.

In the cost analysis activity, both Copy Cataloging and Original Cataloging were "weighted" by changing the denominator in the first fraction of the equation from "Volumes Received" to the number of volumes showing LC cataloging copy or not showing LC copy, respectively. In using these figures to project processing costs for budgeting purposes, we need to integrate this data into the whole. To do this, we identify from the verification report the per cent of non-duplicating first-time searches with LC copy and the per cent without LC copy. For example, the verification report for the Education Library shows 0.682 of all such searches for Education yielded LC cataloging copy; 0.318 did not. Therefore, we multiply the weighted cost of copy cataloging ($2.79 per LC copy volume) by 0.682 to get $1.90. We also multiply the weighted cost of original cataloging ($9.38 per volume without LC copy) by 0.318 to get $2.98. The total cost of monograph cataloging for the Education Library is $4.88 per volume received ($1.90 plus $2.98). The base cost for OUTPUT projected for 1985/86 is $7.95, but this figure will vary somewhat among libraries, depending on each library's mix of LC cataloging versus original cataloging.

III. PRODUCTION TARGETS

A. INPUT Targets

For each module, we set targets of production. These vary among libraries, depending on the volume base projected for each library. From the first fraction in the equation to determine processing costs, we obtain the ratio of production units to volumes received. We can calculate this ratio from the previous year for each module and apply it to the new volume base to determine the production target for the new year. For example, in the previous year, Non-serial Receiving processed 23,000 volumes against the grand total of 41,818 volumes received for a ratio of 0.55 non-serial volumes to 1.0 total volumes received. Applying this 0.55 ratio to the 43,899 volumes projected for the current year gives us a target production figure of 24,144 non-serial receipts. On the individual library level, assume we have projected a 3,700 volume base for the Divinity Library in 1985/86. The Non-serial Receiving target for Divinity would be 3,700 times 0.55, or 2,035 volumes. This is the number of volumes we project the Divinity Library has paid to have received in this particular module.

B. SERIAL Targets

We determine serial targets by the same procedure, using the total production statistics of each module divided by the total number of volumes received. We multiply this figure times each library's volume base to determine the projected production target of each SERIAL track module for each library.

C. OUTPUT Targets

For both INPUT and SERIALS, the number of volumes projected, and therefore the processing cost assessment (volumes x cost per volume) is determined by the anticipated volume base. INPUT and SERIALS are both mandatory and are not subject to negotiation other than changing the basic budget bookfund allocation and/or the annual quota for gift volumes and thereby changing the projected volume base. OUTPUT costs are a different matter. In setting up budgets, we provide each library with a figure which shows what it would cost to OUTPUT at a level of 100%. This means using the total volumes received as the base for figuring the OUTPUT target. The library has the option of determining how much it will pay toward OUTPUT production. Once the library has set its total processing allocation, we subtract INPUT and SERIAL costs from the total amount. The remaining balance is available for OUTPUT processing. Dividing this balance by the OUTPUT cost per volume, we determine the volume base to be used in establishing OUTPUT targets.

To illustrate, the Music Library may have a projected volume base of 500 volumes. Total GTS processing for this base would be $11,065. However, suppose the Music Library could finance only $10,000. We would determine that at $8.71 per volume, the INPUT costs for 500 volumes is $4,355, and at $7.31 per volume, the SERIAL costs for 500 volumes is $3,655, for a total of $8,010. This leaves $1,990 available for OUTPUT processing. At a cost of $6.31, $1,990 will buy 315 volumes of OUTPUT processing (approximately 63% of the projected input).

The production ratio of Monograph Cataloging (Copy Cataloging plus Original Cataloging) is 0.577 titles cataloged to 1.0 volumes received. For Music, given the above illustration, we would multiply 315 volumes of paid OUTPUT processing times 0.577 to get a target of 182 titles cataloged. In this manner, we determine the volume base for OUTPUT processing which each library buys and, using this volume base, we set production targets for each library.

IV. SETTING THE GTS BUDGET

Once libraries set their allocations for technical processing, the system-wide administration notifies General Technical Services of the "income" it will have for the coming year. Indirect Costs are deducted first; the balance is available for GTS budgets.

Using the projected volume base for the INPUT and SERIAL modules and the revised volume base for OUTPUT modules, we determine first the amount of staffing needed. We already know the production targets for each module, both at the individual library level and at the total production level. From the cost analysis equation, we can determine the ratio of staff hours to production units. For example, Serial Cataloging (including Maintenance), with a volume

base of 43,899 volumes received, has a production ratio of 0.064 titles to 1.0 volume received, for a target of 2,810 titles (43,899 x 0.064). From the previous year, we show a ratio of 3.57 hours needed to process one title. (Remember, this is paid hours which includes leave time, meetings, liaison duties, etc.; it is not 3.57 production hours per title.) For a target of 2,810 titles, we need 10,031 hours (2,810 x 3.57). To aid in knowing how these hours should be distributed among exempt, classified and student employees, we can go back to the early tables of cost analysis which recorded the ratio of hours in each of these three categories for each of the modules. While we are not bound to repeat the same distribution, we can receive some guidance from these distribution tables. To determine remaining allocations for supplies and equipment we use the cost per volume detail already established. For example, supplies for Marking are $0.05 per volume; at 43,899 volumes this is $2,195.

If the next year's income from all sources--basic budgets and restricted budgets with processing costs attached--does not provide sufficient income to support the current year's level of operation, we have to reduce staff and supplies to stay within budget. Since equipment is usually a "given," we have to make the cuts in staff allotments and/or supplies allotments.

When all budgets have been finalized (usually not until after the beginning of the new fiscal year), we re-calculate projected costs by using final budget figures for General Technical Services as well as for the libraries using GTS. If we made any budget cuts between the preliminary budget and the final budget, the result will be a lower processing cost to the libraries--assuming the volume base remains unchanged. Since the number of volumes scheduled for INPUT and SERIALS will not have varied, the bottom line costs for these two tracks will be lower. This "frees" more funds for OUTPUT which means the libraries will probably experience an increase in their target figure. If, on the other hand, a category in processing costs (for example, OCLC telecommunications) receives a sharp increase that has not been anticipated, we have to adjust our cost projections to take this into consideration. The result in this scenario would be an increase in processing costs. If the INPUT and SERIAL volume bases remain unchanged, a higher cost per volume means a higher bottom line for these two processing tracks, resulting in fewer funds available for OUTPUT. Fewer funds for OUTPUT plus a higher OUTPUT cost per volume causes a reduction in the expected targets for each library.

Finally, after the end of the fiscal year, we do a cost analysis based on the real data of volumes received and expenditures shown on GTS budgets. This reveals how close we came to providing the libraries with the targets of production for which they paid. Some years, production will not reach target; other years, production will exceed target. Many factors, not all of them under our control, will influence the final results.

The new model does not guarantee that libraries will always get what they pay for nor does it guarantee that General Technical Services will always be provided "income" appropriate to the amount of work performed, but it does offer measurements to assure that staffing, production, and income are closely coordinated. And, for the first time, it clearly acknowledges that the responsibility for determining the cataloging backlog is in the budgetary hands of the libraries and their deans.

NATIONAL AGRICULTURE LIBRARY

	Current Operation			I L S	
	Items per yr.	Minutes per Item	Hours per yr.	Minutes per Item	Hours per yr.
Acquisitions Branch					
Monograph Orders	20000	10	3333	3	1000
Serials Renewals	28000	3	1400	1	467
Continuation Orders	3800	10	633	3	190
Exchange card file update	16000	1.5	400	.5	133
Exchange card file retrieval	16000	1.5	400	.5	133
Check-in Records (Monographs)	20000	3	1000	1	333
Fiscal Management Reports (hrs)	85	60	85	17	24
Cataloging Branch					
Monographs, Searches	20000	8	2667	0	0
Monographs, Searches on ILS	20000	0	0	4	1333
Catalog Cards Filed	180000	.45	1350	0	0
Serials Control Branch					
Serial Issues Checked In	170000	3	8500	1	2833
Serial Issues Claimed	1000	7	117	2.3	38
STAR (Serials) File Updates	12000	8.5	1700	2.9	580
Indexing Branch					
Check-In File Record	15000	3	750	1	250
Transfer Records to LJI (hrs)	20	60	20	0	0
Entering Co-op Input (hrs)	140	60	140	0	0
IV-Phase Down-time (work-hours)	910	60	910	0	0
ILS Down-time (work-hours)	240			60	240
Lending Branch					
Inter-Library Loan Requests	30000	2	1000	.7	350
Photocopy Requests	70000	2	2333	.7	817
Inter-Library Borrow Requests	14000	4.5	1050	1.5	350
Bibliographic Searches (hrs.)	5737	60	5737		
ILS Bib. Searches (hrs.)	1912			60	1912
Stack searches for items not-on-shelf	20000	5	1667	1	333
D.C. Reference Center					
Reference requests	5470	5	456	1	91
Call Number look-ups	4100	5	342	1	68
Not-on-shelf traces	400	5	33	1	7
Information Systems Division					
Four-Phase and SAMANTHA Programming (work-hours)	5200	60	5200		
ILS Programming (work-hours)	2600			60	2600
TOTAL HOURS			41223		14084
Hours Saved With ILS			27139		
Productivity Increase (in dollars) With ILS (Hours Saved * 14.92)			404913		

COSTS ASSOCIATED WITH THE CARD CATALOG

This paper presents the results of a research project undertaken in spring 1984 to determine the current costs of producing and maintaining the University of Oregon Library's card catalogs. The research focuses on the time and money spent specifically on the PUBLIC ACCESS CATALOGS IN CARD FORMAT. The time and money spent on the shelflist (not a public access catalog) is not considered here; neither are costs (such as FTUs and archive tape costs) which must be paid regardless of the format of the catalog. Thus, this paper does not address the question of the costs associated with producing and maintaining a catalog in general; rather it seeks to report on an analysis of costs which relate specifically to card catalogs and which would be eliminated if the public card catalogs were closed.

The library's technical services staff presently maintains more than 10 public access card catalogs plus several shelflists and a COM catalog. A list of the public access catalogs is shown in Table 1. The largest card catalogs are of course the author and title union catalogs in the main library.

It has long been recognized that providing access to a library collection is an expensive and time-consuming business. The means by which access is provided -- card and COM being the choices at the U of O at this time -- is reflected in the organization of labor in the technical services departments. Table 2 shows how the U of O catalog department is staffed and organized, and indicates the extent

TABLE 1.

PUBLIC CARD CATALOGS BEING MAINTAINED, SPRING 1984.

*Main (author & title)

*Science (author & title)

Map Room (author-title-subject dictionary catalog)

Douglass Room (author, title, subject)

IMC (author, title, subject)

*Documents (author & title)

*Oregon Collection (author & title)

*Juvenile Collection (author & title)

OIMB (author, title, subject)

Pine Mountain (author, title, subject)

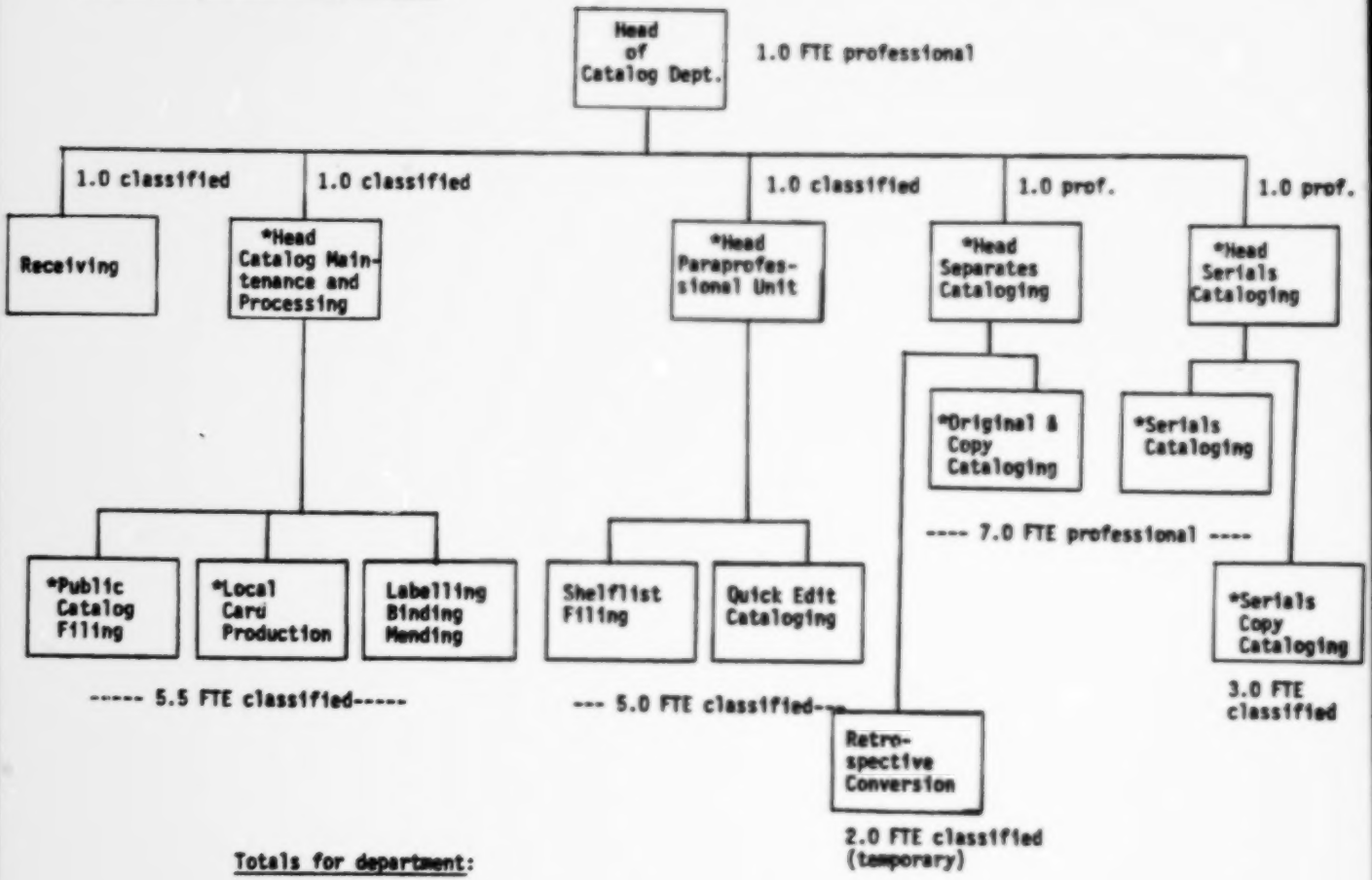
*subject access provided by the COM catalog.

of dispersion of tasks related to the card catalogs among its personnel. Two cautions should be noted: first, that the chart is illustrative rather than definitive of the present division of labor in the department; and more importantly that the chart fails to depict staff involvement in the production and maintenance of the bibliographic database used to produce the U of O COM catalogs. In fact the head of the paraprofessional unit takes charge of coordinating needs and problems with Blackwell North America, the U of O COM vendor, while the rest of the department has added and adjusted routines to accomodate the needs of building and updating the COM database. The costs associated with the COM catalog are the subject for another research project; suffice it to say here that the catalog department presently finds itself in the unusual and complex position of having to maintain catalogs in two formats, card and COM, simultaneously.

Table 3 charts the progress of catalog cards through the catalog department. For reasons of brevity and clarity, the routines have been considerably simplified, but the chart shows a fairly accurate picture of the current workflow. Like the library collection, bibliographic information is not static but dynamic and changing; the impact of these changes on the catalogs is shown at the lower right of the chart.

There are of course other tasks which relate to the provision of up-to-date bibliographic information which the flowchart does not adequately illustrate. At the present time the main U of O card catalogs are used as the chief means of identifying problems and

Table 2.
Organizational Chart, Spring 1984.

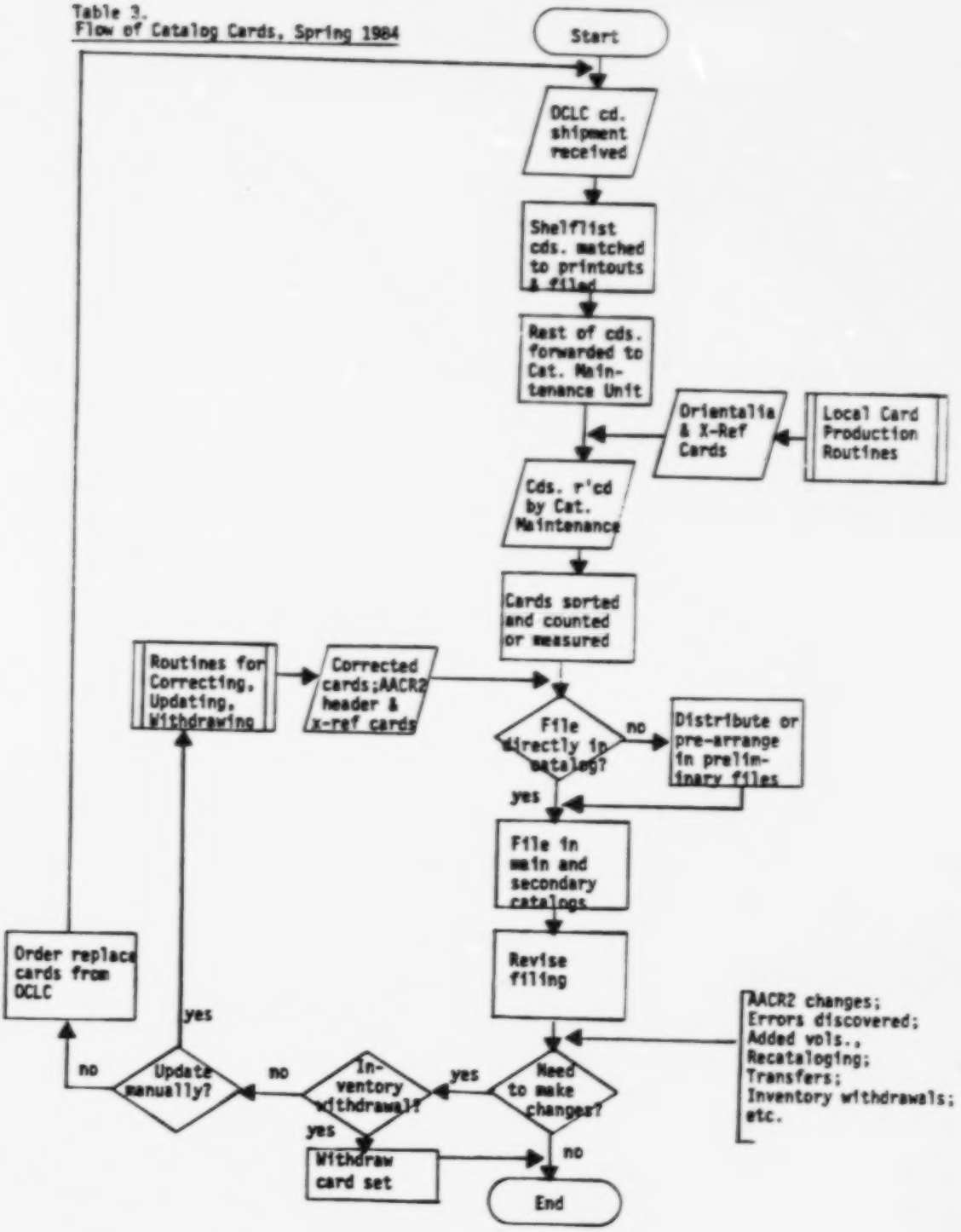


Totals for department:

10.0 FTE professional
16.5 FTE classified
2.0 FTE classified (temporary)

*Involved in maintenance of public card catalogs.

Table 3.
Flow of Catalog Cards, Spring 1984



inconsistencies in new cataloging; this problem-solving role is part of the function of any catalog, regardless of format. Therefore the intellectual time and effort spent using the card catalogs to validate bibliographic information has not been considered in this study's design and implementation. Data have been collected and analyzed only for those tasks depicted in Table 3 which pertain strictly to the maintenance of a public access catalog in card format.

METHODOLOGY

At the outset of this study, four supervisors (Heads of Separates, Serials, Catalog Maintenance and Paraprofessional Unit) were interviewed in order to gather information about the workflow and distribution of labor and to establish an appropriate list of tasks for work sampling. In this way the job logs appended to this report -- one log for professional staff, the other for clerical staff -- were designed and used for data collection during the week of April 16-20. A meeting was held with the clerical staff the Friday before the study week to pass out Monday's job log sheets, explain the study, and answer questions; professional staff were informed in their usual weekly meeting. All study participants kept the logs themselves and turned in their sheets daily; feedback and questions were encouraged. The data were then compiled from the log sheets to yield a kind of "snapshot" of how the department's time is spent on the catalogs. As it turned out, due to vacation scheduling and tne resulting work substitutions, and the fact that some tasks are performed monthly rather than weekly, some task times had to be reconstructed or

estimated in order to achieve a result which could be deemed an "average" week. In all cases estimates were made in consultation with the staff member and section heads. Finally, a list of study participants' salaries and a year's worth of card filing statistics (April '83 through March '84) were collected from library administrators.

These data were analyzed using the CONDESCRIPTIVE and REPORT procedures of SPSSx, a package of statistical programs which runs on the university's IBM 4341 computer. Job logs and SPSSx analyses are available for review upon request in the catalog department.

RESULTS AND CONCLUSIONS

Results of the data analysis are reported in Table 4. The table shows that during the study week, 2.74 FTE staff were engaged in public card catalog tasks. As might be expected, the routines under consideration here are mostly clerical (2.58 FTE); professional librarians (.16 FTE) are involved as filing revisors and through their participation in the AACR2 change procedures. Assuming all the card catalogs in Table 1 were closed, this 2.74 staff savings could be directed to new projects. However, it should be understood that since this FTE is distributed among the jobs of 17 individuals (9 clerical, 8 professional), no one of whom engages solely in card catalog processes, reassignment of duties would not be a simple task. (In fact the minimum time spent on the card

TABLE 4.

ESTIMATE OF WEEKLY COSTS OF PUBLIC CATALOGS
BY EMPLOYEE LEVEL

Task No.		Clerical Hours	Professional Hours	Total Hours
1.	Taking statistics, sorting, distributing	3.43	0.00	3.43
2.	Preliminary arrangement of cards	20.42	0.00	20.42
3.	Filing in all catalogs	31.70	0.00	31.70
4.	Revising filing	9.50	5.50	15.00
	*SUBTOTAL FILING TASKS	65.05	5.50	70.55
5.	Local card production (cross references and Orientalia)	15.88	0.00	15.88
6.	Changes and updates (added volumes, AACR2 changes, transfers, recats, corrections, etc.)	21.37	1.00	22.37
7.	Maintenance of card catalog cabinets	.23	0.00	.23
8.	Answering questions about filing; assisting staff using public catalogs	.68	0.00	.68
	*SUBTOTAL OTHER TASKS	38.17	1.00	39.17
	GRAND TOTAL	103.22	6.50	109.72
	TOTAL IN FTES	2.58	.16	2.74

*Based on current salaries of study participants, weekly cost of filing routines is $455.46; other tasks $241.08; total weekly cost $696.54.

catalogs among the clerical group was .08 FTE, the maximum was .77 FTE, and the mean was .29 FTE.)

The $455.46 weekly filing costs were calculated by applying the library office's formula for determining an individual's hourly wage, multiplying the result by the number of hours that individual spent on filing routines (tasks 1 through 4 in Table 4), then summing the products for all the study participants. Other weekly costs reported in Table 4 were calculated in the same way.

With this estimate of weekly filing costs, $455.46, one can go on to estimate a unit cost for filing a card by dividing the weekly cost by the average number of cards filed weekly. Department statistics show that 150,717 cards (excluding shelflist) were filed last year, or an average of 2,898 cards per week. Thus the unit cost per card for labor can be estimated as

$$\$455.46 / 2,898 = \$.16 \text{ per card}$$

Materials cost is known: the library pays OCLC $.065 per card for the card stock; so one may estimate that the cost of materials plus labor for filing is $.225 per card.

In conclusion, it should be noted that, assuming the closing of the public catalogs, a full 2.74 FTE staff savings would probably not immediately be realized, because the catalog department would require reorganization. Jobs would have to be redefined; some procedures now in place would have to be reworked, others newly created; some routines, such as those for database maintenance, would acquire new importance. Under present circumstances, the department catches and resolves

most heading conflicts and errors at the point of filing into the public catalogs. If a computer were to take over all filing, the department's authority work procedures would require a major overhaul in order to insure adequate quality control over the database. Only once these new procedures were in place could the staff's efforts begin to be redirected to such pressing departmental needs as catching up with inventory withdrawals and retrospective conversion.

Report submitted by Karen Calhoun, May 1, 1984.

JOB LOG FOR WEEK OF APRIL 16-20
nln,gp,kc,kd,cgo,tms,hwr,kdg,hp

NAME_____ DAY_____

Tasks	Running acct. of time on task	Total for day
1. Revising filing in author or title catalog at main library		
2. Filing or revising filing -- all other catalogs (e.g., cgo at Douglass). Include time spent going to and from divisions.		
3. Writing instructions on special form to correct cards (nln only)		
*4. Retrieving cards from public catalogs to make AACR2 or other changes		
*5. Correcting cards (by lining out and rewriting or by whiting-out and retyping headings or uniform titles)		
*6. Filing header and cross-reference cards for main author and title catalogs; Refiling corrected cards or moving cards to new (AACR2) position in main author and title catalogs.		

NOTE: Do not count the time you spend typing or filing cards or cross-references for NAF or SDF.

*Report a combined figure for these if that would be easier for you.

NOTES AND COMMENTS

UNIVERSITY OF OREGON

JOB LOG FOR WEEK OF APRIL 16-20 NAME_____ DAY_____
Jane, Robin, Mary, Pat, Cheryl, Gail, Wilma, Kathy W., Janet

Tasks	Time on task (running acct. or total for day)
Counting or measuring cards (new and corrected cards for all catalogs & Orientalia)	
Counting or measuring cards to be withdrawn	
Sorting and distributing cards (excluding shelflist) or x-refs for main and secondary prelim. files	
Prelim. filing for MAIN public catalogs (not shelflist)--including new & corrected cards & x-refs, Orientalia	
Prelim. filing/arranging for ALL OTHER CATALOGS (new & corrected cards & x-refs for Science, Douglass, IMC, Docs., Or. and Juv. Colls., OIMB, Pine Mt.)	
Filing in MAIN author and title catalogs (include time spent refiling corrected cards here)	
Filing in ALL OTHER CATALOGS (excluding shelflist). Include the time it takes to go there and come back.	
Revising filing in MAIN author and title catalogs.	
Revising filing in ALL OTHER CATALOGS. Include the time it takes to go there and come back.	
Writing instructions on special form to correct cards (js only).	
Typing and filing temps for public catalogs (NOT shelflist).	
Withdrawing replaced or superfluous cards from MAIN catalogs (excluding shelflist); or withdrawing and correcting or updating author/title cards by hand.	
Withdrawing replaced or superfluous cards from ALL OTHER CATALOGS (excluding shelflist); or withdrawing and correcting/updating by hand. Include time spent going there and coming back.	
Revising corrected cards (js only).	
Filing AACR2 header and x-ref cards; refiling or moving cards to new AACR2 positions (js only)	

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UNIVERSITY OF OREGON

JOB LOG

Tasks — Time on task

Withdrawing cards from all catalogs (excluding shelflist) for items no longer in collection.

Cross-reference routine:

Matching x-ref printouts to main entry cards

Typing x-refs

Revising x-ref typing (js only)

Xeroxing x-ref cards

Orientalia:

Sorting cards from Orientalia trucks

Xeroxing

Highlighting

Typing cross-references

Revising cards (js only)

Typing AACR2 header and x-ref cards for public catalog -- exclude time spent on BNA x-refs, NAF cards or x-refs, SDF cards or x-refs (kw only)

Shifting cards in drawers (ALL CATALOGS excluding shelflist)

Preparing label copy, typing and affixing labels for catalog cabinets (ALL CATALOGS excluding shelflist)

Answering questions about filing (excluding shelflist); giving assistance to departmental and other library staff using card catalogs

NOTES AND COMMENTS:

UNIVERSITY OF OREGON

IOWA STATE UNIVERSITY LIBRARY

RETROSPECTIVE CONVERSION

In-House. In-house retrospective conversion would be done through OCLC during non-prime time. The cost estimates are calculated separately for serials and monographs. However, the tasks required to convert records, the time to complete each task, and the appropriate staff level were identified for each group of material.

For Monographs the conversion process was broken into five categories according to relative difficulty of converting. The number of titles in each category is based on a sample taken in 1980 and also on hard statistics which resulted from our conversion of all materials located in special locations (Locations Conversion Project 1980-1983).

The first category is Simple Updates (10 percent of collection) and is the easiest to convert since ISU cataloging records would exactly match a Library of Congress record with only minor changes to call numbers and/or publication date. All editing would be done by student assistants with only cursory review by library assistants. The next category, Simple Changes (20 percent of the collection) would require slightly more editing and more card pulling but again would be completed by students with library assistant review. Category III (45 percent of the collection) entails more extensive changes to records and library assistants would complete the editing. Category IV (10 percent of the collection) represents major changes to OCLC records and the editing is also by library assistants. The final Category (15 percent of the collection) represents titles for which there would be no matching record in the OCLC data base and is the most difficult conversion requiring library assistants and professionals since OCLC requires that all new additions to its data base must meet AACRII standards.

The conversion of serials is not broken into categories according to difficulty since serials are not so easily categorized as monographs. The serials MARC format is unfortunately very lengthy and complex and serials inherently presents a higher frequency of cataloging problems. Because of this difficulty no students are used in the conversion projections, and there is a greater need to use higher level staff. The costs are based on 92 percent of the serials matching an OCLC record. This percentage and the time estimates are based on actual conversion work which the Serials Department completed last year. Supervision and training costs are incorporated into each task rather than listed separately.

The conversion statistics do not include estimates for entering detailed and summary holdings into the newly accepted MARC Holdings format. The future use of this format would make a sizeable impact on conversion costs for serials and a lesser impact on monographs.

IOWA STATE UNIVERSITY

(Monographs)

	o Total	Cost/Title	Total
1. Category I Simple updates (10% of collection)			
A. 43,000 titles, 2,870 hours x $3.50/hr. (Student assistants)	$10,045	.23	
B. 43,000 titles, 1,050 hours x $5.90/hr.	$6,195		
(LA II) Benefits	1,344		
	$7,539	.18	
		.41	$17,584
2. Category II Simple changes (20% of collection)			
A. 86,000 titles, 13,015 hours x $3.50/hr. (Student assistants)	$45,553	.53	
B. 86,000 titles, 1,975 hours x $5.90/hr.	$11,653		
(LA II) Benefits	2,529		
	$14,182	.16	
		.69	$59,735
3. Category III More extensive changes (45% of collection)			
A. 193,500 titles, 19,590 hours x $3.50/hr. (Student assistants)	$68,565	.35	
B. 193,500 titles, 17,340 hours x $5.90/hr.	$102,306		
(LA II) Benefits	22,200	.64	
	$124,506	$1.00	$193,071
4. Major changes (10% of collection)			
A. 43,000 titles, 4,360 hours x $3.50/hr (Student assistants)	$15,260	.35	
B. 43,000 titles, 8,870 hours x $5.90/hr	$52,333		
(LA II) benefits	11,356		
	$63,689	$1.48	
C. 43,000 titles, 720 hours x $7.80/hr.	$5,616		
(LA IV) Benefits	1,219		
	$6,835	.16	
		$1.99	$85,784
5. Category V Original records to be input (15% of collection)			
A. 64,500 titles, 6,680 hours x $3.50/hr. (Student assistants)	$23,380	.36	
B. 64,500 titles, 16,530 hours x $5.90/hr.	$97,527		
(LA II) Benefits	21,163		
	$118,690	$1.84	
C. 64,500 titles, 15,305 hours x $7.00/hr.	$107,135		
(LA III) Benefits	23,248		
	$130,383	$2.02	
D. 64,500 titles, 9,175 hours x $9.00/hr.	$82,575		
(Professionals) Benefits	17,919		
	$100,494	$1.56	
		$5.78	$372,947
6. Training & Supervision			
A. 430,000 titles, 7,179 hours x 5.90/hr.	$42,358		
(LA II) Benefits	9,191		
	$51,547		
B. 430,000 titles, 9,640 hours x $7.80/hr.	$75,169		
(LA IV) Benefits)	16,312		
	$91,481	.33	$143,027
7. OCLC Costs			
A. 365,500 titles x .30/title	$109,650	.30	$109,650
8. Supplies & stationery	$5,000		$5,000
9. GRAND TOTAL		$2.29	$986,789

IOWA STATE UNIVERSITY

CONVERSION IN-HOUSE

	Serials	Cost/Title	Total
1.	Prepare temp. cards for officials for		
	44,000 titles, 367 hours x $4.49	.05	$1,648
	(CTI) Benefits		358
			$2,006
2.	Pull officials		
	44,000 titles, 244 hours x $4.49	.03	$1,096
	(CTI) Benefits		238
			$1,334
3.	Search serials data base index for sequence number		
	44,000 titles, 183 hours x $4.49	.02	$ 822
	(CTI) Benefits		178
			$1,000
4.	Search/print serials data base records		
	978 hours x $4.49	.12	$4,391
	(CTI) Benefits		953
			$5,344
5.	Search/print OCLC records		
	44,000 titles, 3,385 hours x $5.90	.55	$19,972
	(LA II) Benefits		4,334
			$24,306
6.	Original records to be input		
	3,520 titles, 14,667 hours x $7.30	$37.00	$107,069
	(LA II, III, Professionals) Benefits		23,234
			$130,303
7.	Edit online		
	40,480 titles, 4,000 hours x $4.49	.54	$17,960
	(CTI) Benefits		3,897
			$21,857
8.	Revise online		
	44,000 titles, 2,933 hours x $5.90	.48	$17,305
	(LA II) Benefits		3,755
			$21,060
9.	Refile officials		
	44,000 titles, 293 hours x $4.49	.04	$1,316
			285
			$1,601
10.	OCLC costs		
	40,480 titles x $.30	.30	$12,144
11.	Supplies and stationery		$2,000
GRAND TOTAL			**$222,955**

LABOR COSTS

No. of Titles %	Category	Student assistants Hours (3.50hr.)	Cost	Library Assistant II Hours (5.90hr.)	Cost	Library Assistant III Hours (7.00hr.)	Cost	Library Assistant IV Hours (7.80/hr)	Cost	Professional Hours (9.00/hr)	Cost	Benefits (LA & Prof.) 21.7%	Total Costs	Cost per Title
10% 43,000	No changes (except call number) DLC record	2,870	10,045.00	1,050	6,195.00							1,344.32	17,584.32	41¢
20% 86,000	Simple changes-DLC record	13,015	45,552.50	1,975	11,652.50							2,528.59	59,733.59	69¢
45% 193,500	Major changes-DLC & member records	19,590	68,565.00	17,340	102,306.00							22,200.40	193,071.40	1.00
10% 43,000	Major changes-DLC & member records	4,360	15,260.00	8,870	52,333.00			720	5,616.00			12,574.03	85,783.93	1.99
85% 365,500		39,835	139,422.50	29,235	172,486.50			720	5,616.00			38,648.24	356,173.24	97¢
15% 64,500	No OCLC record	6,680	23,380.00	16,530	97,527.00	15,305	107,135.00			9,175	82,575.00	62,330.43	372,947.43	5.78

BEST COPY AVAILABLE

Category	Number of Titles	Activity & Units per time	Student Assistants Hours	Cost	LA II	Hours	Cost	LA III	Hours
Simple Updates	43,000	1. Identify shelf list cards, find matching OCLC record, edit call number, update, attach green dot to shelf list							
10%		15/hour	3.50	2,870	10,045.00				
No changes except call no.		2. Review simple updates 20 min./shelf list drawer 990 drawers x 20 min.				5.90	330 hrs.	1,947.00	
	(2,155 5%)	3. Problem solving (5% of total) 2,155 problems 20 min./problem				5.90	720 hrs.	4,248.00	
		Totals		2,870	10,045.00		1,050	6,195.00	

Casual Hourly	10,045.00
LA II	6,195.00
Benefits	1,344.32
	17,584.32

41¢/title

F.T.U.

Terminal Time 2,870

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Category	Number of Titles	Activity & Units per time	Student Assistants	Hours	Cost	Library Assistant II	Hours	Cost
II	86,000	1. Search, print, cut OCLC records						
20%		60/hour	$3.50	1,440	$5,040.00			
Simple changes DLC records		2. Prepare blue cards for s.l. & m.e.						
		40/hour	$3.50	2,150	$7,525.00			
		3. Pull m.e. cards						
		40/hour	$3.50	2,150	$7,525.00			
		4. Pull s.l. cards						
		100/hour	$3.50	860	$3,010.00			
		5. Consolidate printouts/cat. cards						
		100/hour	$3.50	860	$3,010.00			
		6. Review and sort for editing						
		100/hour	$3.50	860	$3,010.00			
		7. Edit & produce records						
		20/hour	$3.50	4,300	$15,050.00			
		8. Refile shelf list cards						
		220/hour	$3.50	395	$1,382.50			
		9. Refile main entry cards						
		160/hour				$5.90	540	$3,186.00
	(4,300 5%)	10. Problem solving						
		20 min./problem				$5.90	1,435	$8,466.50
		Totals		13,015	$49,552.50		1,975	$11,652.50
		Casual Hourly $49,552.50						
		LA II $11,652.50						
		Benefits (21.7%) $2,528.50						
		$68,733.50						
		69¢/title						
		F.T.U.						
		Terminal Time		5,740				

Category	Number of titles	Activity & Units per time	Student Assistants	Hours	Cost	Library Assistant II	Hours	Cost
III 45%	193,500	1. Search, print, cut OCLC records 60/hour	$3.50	3,225	$11,287.50			
More extensive changes		2. Prepare blue cards for s.l. & m.e. 40/hour	$3.50	4,840	$16,940.00			
DLC & Member records		3. Pull main entries 40/hour	$3.50	4,840	$16,940.00			
		4. Pull shelf list cards 100/hour	$3.50	1,935	$6,772.50			
		5. Consolidate printouts & catalog cards 100/hour	$3.50	1,935	$6,772.50			
		6. Review & sort for editing 100/hour	$3.50	1,935	$6,772.50			
		7. Edit & produce records 15/hour				$5.90	12,900	$76,110.00
		8. Refile main entries 160/hour				$5.90	1,210	$7,139.00
		9. Refile shelf list 220/hour	$3.50	880	$3,080.00			
(5%)		10. Problem solving 20 min./title				$5.90	3,230	$19,057.00
		Totals		19,590	$68,565.00		17,340	$102,306.00

Casual hourly $68,565.00
Library Assistant II $102,306.00
Benefits (21.7%) $22,200.40

$193,071.40

$1.00

Terminal Time	3,225	12,900	16,125

BEST COPY AVAILABLE

Category	Number of titles	Activity & Units per time	Student Assistants	Hours	Cost	LA II	Hours	Cost	LA IV	Hours	Cost
IV	43,000	1. Search, print, cut OCLC records									
10%		60/hour	$3.50	720	$2,520.00						
Major changes to OCLC records DLC & Member		2. Prepare blue cards for shelf list and main entry 40/hour	$3.50	1,075	$3,762.50						
		3. Pull main entries 40/hour	$3.50	1,075	$3,762.50						
		4. Pull shelf list cards 100/hour	$3.50	430	$1,505.00						
		5. Consolidate printouts and catalog cards 100/hour	$3.50	430	$1,505.00						
		6. Review and sort for editing 100/hour	$3.50	430	$1,505.00						
		7. Edit and produce records 5/hour				$5.90	8,600	$50,740.00			
		8. Refile main entries 160/hour				$5.90	270	$1,593.00			
		9. Refile shelf list 220 cards/hour	$3.50	200	$7,00.00						
(5%)	(2,150)	10. Problem solving 20 min./title							$7.80	720	$5,616.00
		Totals		4,360	$15,260.00		8,870	$52,333.00			$5,616.00
		Casual hourly $15,260.00 LA II $52,333.00 $57,949 LA IV $5,616.00 Benefits(21.7%) $12,574.93 $85,783.93									
		2.00/title									
Terminal Use				720			8,600				9,320

Category	Number of Titles	Activity & Units per time	Student Assistants	Hours	Cost	LA II	Hours	Cost	LA III	Hours	Cost	Prof.	Hours	Cost	
V 15%	64,500	1. Prepare blue cards for shelf list 180/hour	3.50	360	$1,260.00										
Original records to be input		2. Prepare blue cards for main entries 40/hour	3.50	1,615	$5,652.50									Casual hourly LA II LA III Professional Benefits	$23,380.00 $97,527.00 $107,133.00 $82,575.00 $62,330.43
		3. Pull main entries 40/hour	3.50	1,615	$5,652.50										$372,947.43
		4. Re-search OCLC for bibliograhpic records 30/hour	3.50	2,150	$7,525.00										$5.78/title
		5. Search LCAR, print, & cut records 20/hour				5.90	3,225	$19,027.50							
		6. Consolidate shelf list & main entry with LCARs 100/hour	3.50	645	$2,257.50										
		7. Review & sort for problems & further processing 15/hour										9.00	4,300	$38,700.00	
(50%)	(32,250)	8. Search selected titles against LCSH fiche 15/hour				5.90	2,150	$12,685.00							
		9. Tag Records 6/hour							7.00	10,750	$75,250.00				
		10. Revise tagging 10/hour										9.00	3,585	$32,265.00	
		11. Input records 6/hour				5.90	10,750	$63,425.00							
		12. Revise inputting 10/hour							7.00	3,585	$25,095.00				
		13. Refile main entries 160/hour				5.90	405	$2,389.50							
		14. Refile shelf lists 220/hour	3.50	295	$1,032.50										
(10%)	(6,450)	15. Problem solving 5/hour										9.00	1,290	$11,610.00	
(15%)	(9,675)	16. Completing NAF work 10/hour							7.00	970	$6,790.00				
		Terminal Time		6,680 2,150	$23,380.00		16,530 10,750	$97,527.00		15,305 3,585	$107,135.00		9,175	$82,575.00	16,485

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